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ABSTRACT

This publication of the California Association of School Psychologists includes articles written by practitioners, trainers, and students. The topics represent a sampling of the broad range of students that school psychologists are asked to serve today. Two articles discuss current findings relevant to working with the populations of students who are severely handicapped. Another article examines the challenges of serving at-risk students. It also features reviews of literature and theoretical perspectives on topics relevant to practice in psychology and education. The titles include: "Considerations for the School Psychologist When Providing Services for Maltreated Foster Children: A Developmental Perspective" (Linda Webster); "Diagnosis of Attention-Deficit/Hyperactivity Disorder (ADHD) in Childhood" (Steven A. Brock); "Naturalistic Teaching Strategies (NATS) To Teach Speech to Children with Autism: Historical Perspective, Development, and Current Practice" (Marjorie H. Charlop-Christy; Linda A. LeBlanc; Michael H. Carpenter); "Working with Families: Understanding Parent Views Regarding Inclusive Placements for Their Children with Significant Cognitive Disabilities" (David S. Palmer; Sharon A. Borthwick-Duffy; Keith Widaman); and "California's Targeted Truancy and Public Safety Program: Preliminary Outcomes Associated with Two School Districts' Truancy Abatement Efforts" (Michael S. Pobanz; Michael J. Furlong; J. Manuel Casas; Catherine M. Brown). (JDM)

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The California School Psychologist, 1999, Volume 4

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Conditions of Submission Selection of manuscripts is made on the basis of blind peer review of the material submitted for publication (The identity of the author not known to the reviewer.) Reviewers evaluate the manuscript for accuracy and validity of the contents, importance of the topics addressed, contribution to the profession, implications for the practice of school psychology, originality, and quality of writing. Manuscripts must conform to APA style. Manuscripts not in APA format will not be reviewed.

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Technical Requirements Manuscripts must be submitted in Courier or /Helvetica/Ariel 12pt and on a high density PC disk in text/ Word for Windows format (i.e.: no special formatting). All tables and figures must be included on the disk in their original format. (PageMaker files must include all linked files and no embedded figures.) Please indicate the program(s) used. All tables and figures must be camera ready. You can e-mail your submissions directly to: CASPToday@aol.com

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The California School Psychologist

FROM THE PRESIDENT...

It is with great pleasure that I introduce the fourth volume of the *California School Psychologist*. The journal gives CASP the opportunity to highlight the quality research being done by its members. I am pleased to see that this volume contains articles by practitioners, trainers and students. Our efforts are focused on presenting articles with applicability out in the field. I think you will find that this volume contains an interesting array of articles.

We would like to encourage those of you engaged in research endeavors to submit articles for next year's *California School Psychologist*. The year 2000 volume should represent the best of what we have been and what we can be.

Susan Goldman
CASP President

FROM THE EDITOR...

I am pleased to present the current issue of the *California School Psychologist*. The topics in the journal represent a sampling of the broad range of students school psychologists are asked to serve today. Two of the articles present current findings relevant to working with the population of students who are severely handicapped and their families. The others address the challenges of serving ever-increasing numbers of at risk students. Secondly, the articles range from excellent reviews of the literature and theoretical perspectives on these important topics to promising practices in psychology and education. Finally, the collection represents contributions from practitioners, academics, and students in the field of school psychology.

I would like to thank all those in the CASP Office and those who served as reviewers and general advisors as we tackled the task of putting together this journal. I hope this issue serves to further the knowledge base of our readers and stimulates discussion and critical thinking about our roles as school psychologists today.

Marilyn Wilson
Editor

CONSIDERATIONS FOR THE SCHOOL PSYCHOLOGIST WHEN PROVIDING SERVICES FOR MALTREATED FOSTER CHILDREN: A DEVELOPMENTAL PERSPECTIVE

Linda Webster, *Ph.D. University of the Pacific*

Abstract: As the body of research on attachment grows, attachment theory is being increasingly utilized by psychologists as a useful way of conceptualizing the problem behaviors that many foster children present. In addition, this paper explores Bowlby's (1988) model of developmental pathways as a means to understand both normal and abnormal processes and patterns of adaptation and maladaptation. The empirical bases connecting the theoretical principles of attachment with child maltreatment are discussed, and a theoretical rationale for assessment and intervention with attachment-disordered foster children with an emphasis on modifying the child's negative working model of attachment relationships is presented.

The national foster care population has been on the rise since 1983, reaching 300,000 children in 1987 and 462,000 by 1994, and it is estimated that more than 650,000 American children will have spent all or part of 1997 in government-run foster care (Craig & Herbert, 1997). The number of foster children placed in foster care in the U.S. has doubled in the last few years (Carnegie Corporation, 1994), and it is estimated that there will be a million children in care by the year 2000 (Pinkey, 1994).

In 1993 it was reported that one in four foster children remains in care 4.3 years or longer (Tatara, 1993). About 30 percent of foster children who were in care at the end of fiscal year 1990 had experienced three or more different placements during the preceding three years (Tatara, 1990). Just over fifty percent of children who entered foster care entered because of abuse or neglect, and another 20 percent of children entered the system due to parental abuse or parental condition such as incarceration, drug addiction and/or illness. While many of these children are reunified with their parents, a large percentage of those children return to the system (Tatara, 1990). In addition, children are entering the foster care system at a younger age than ever before (U.S. General Accounting Office, 1994). In recent years the numbers of children under the age of 5 in foster care nationally increased at almost twice the rate of the general foster care growth rate (U.S. GAO, 1994). The Multistate Foster Care Data Archive reported in 1997 "that children entering into care at age 1 outnumber other entrants by more than three to one, and infants have the longest stay in care" (Children's Defense Fund, 1998, p. 71). The development of the attachment system during these early years is at a critical period, and repeated moves from biological family to foster care, and from placement to placement constitutes a condition which places the child at additional risk for the development of attachment disorders (Main, 1996). Indeed, foster children have been determined to be at high risk for the development of psychopathology which can be linked with insecure attachment in the child (Lyons-Ruth & Block, 1996).

In California the number of maltreated children increased 132% from 1990 to 1996. There are approximately 164,974 substantiated cases of child maltreatment in Califronia every year. California data indicate that 2.8 children per 1,000 are removed from their homes each year (League of Women Voters of California, 1998). The children in the foster care system reflect California's diverse population; there were comparable numbers of Caucasian and Hispanic children (43% and 36%, respectively), with African American children constituting fourteen percent of the children in the foster care system.

Maltreatment includes emotional abuse, physical abuse, sexual abuse, and neglect and medical neglect (U.S. Department of Health and Human Services, 1998). The social costs of foster care's poor outcomes are staggering. One study (Westat, Inc., 1991) found that two-and-a-half to four years after leaving foster care, 46 percent of the youths had not completed high school, 38 percent had not held a job for more than one year, 25 percent had been homeless for at least one night and 60 percent of the young women had given birth to a child. Forty percent had been on public assistance, incarcerated or had been a cost to the community in some way.

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Currently in California, there are 74,364 children in out-of-home care. The majority of those children are placed in foster family care, with kinship care numbers following closely behind (League of Women Voters of California, 1998).

Since most, if not all, of these children attend school (and most attend the public schools), the increasing numbers correspondingly enhance the likelihood that the school psychologist will interface with many of these children. It is well-established that children in foster care have a high incidence of emotional, behavioral, and developmental problems (Barth, Berrick, Courtney, & Albert, 1992; Pinkey, 1994), and are thus likely to require interventions in the school setting. As the mental health professional with the most advanced psychological training and knowledge of children's social, emotional, and cognitive development, the school psychologist is uniquely positioned to design programs and provide service delivery for these children. Attachment theory is increasingly being utilized as a valuable way of conceptualizing the problem behaviors and learning difficulties that many foster children present, and it behooves school psychologists to become knowledgeable about this needy population of children they serve.

Attachment Theory

Bowlby's (1980) theory of attachment has proven extremely useful for understanding the development of secure and insecure emotional bonds and the importance of the parent-child relationship in personality development as well as psychopathology. His work has tremendous potential in the understanding and treatment of abused and neglected foster children whose attachments have been severely damaged through repeated exposure to separation from and loss of parents, movement to and from various foster homes, and mistreatment, rejection, and abandonment. Bowlby proposed the existence of an internal working model of attachment that is based on actual experiences that the child has with the primary caregiver. Through interactions with their primary caregiver, the child develops expectations and understandings about the workings of relationships. These mental representations of relationships become internalized to the degree that they influence feelings, thought, and behavior automatically and unconsciously (Bowlby, 1969, 1982; Main, Kaplan, & Cassidy, 1985). In the case of secure attachment, the child develops a model that creates an expectational set that others will be responsive and accessible, and in general, the child develops positive and trusting attitudes towards others. They learn to value relationships and construct an internalized template for empathy and reciprocity in relationships (Sroufe, 1997).

On a general level, Fahlberg (1991) argues that attachment security appears to be related to a variety of domains of development. On a more specific level, research indicates that caregiver sensitivity to attachment signals is related to outcomes which directly involve the attachment system (e.g., social development, close friendships, intimacy, etc.). Caregiver sensitivity while playing with and teaching the child appears to directly influence play and cognitive development and language. For example, infants with secure attachments have been found to be more curious and persistent in toddlerhood (Arend, Gove, & Sroufe, 1979). Secure attachment has also been linked to more advanced cognitive functioning during middle childhood and adolescence (Jacobsen & Hofmann, 1997; Jacobsen, Edelstein, & Hofmann, 1994). Main (1973, 1983) has suggested that secure children are able to dedicate more attention to exploration since less attention is required to monitor the parent. This provides a context which fosters a child's ability to learn and develop positive relationships with others.

Ainsworth (Ainsworth, Blehar, Waters, & Wall, 1978) describes attachment security as the state of being secure, or untroubled as to the availability of the attachment figure. The Ainsworth system for classifying patterns of attachment in infancy was based on a laboratory procedure designed to elicit attachment behavior in the infant. This procedure was called the "Strange Situation" and involved two separations from and reunions with the mother in a strange environment. The premise is that the infant's internal working model of

attachment would be activated by a mildly stressful event, such as a brief separation from the mother. It is also argued that, while the mother may be capable of altering her behavior in a socially desirable manner in this situation, the infant is incapable of such alterations in their attachment behavior. For this reason, it is the infant's response that is observed for classification, and not the mother's.

Secure. The majority of children in studies of a normal population are classified as being securely attached (classified as "B") to the caregiver. These infants are described as being autonomous and exploring the room fairly readily, while also showing signs of missing the mother. Mothers of "B" infants were described as being sensitive and responsive to the verbal and nonverbal communications of the infant. From a learning theory perspective, these children are on a schedule of consistent positive reinforcement of affective signals. Preschoolers with histories of secure attachment are more engaged with peers in a positive manner, are ranked higher socially, and have more friends (LaFreniere & Sroufe; 1985, Sroufe, 1983) and deeper relationships (Pancake, 1985).

Insecure - Avoidant. Infants are considered insecure/avoidant (classified as "A") when they show little or no distress during the Strange Situation, and in fact seem to avoid and ignore the mother upon her return. Mothers typically reject, withdraw from, or actively punish their children in the context of clearly expressed affective signals from the child. These children are on a schedule of predictable punishment of the expression of emotional need. The child's strategy appears to be an attempt to deactivate feelings of insecurity about the separation by organizing attention away from the mother and toward the inanimate environment. However, physiological recordings during the Strange Situation show that avoidant infants are just as aroused (or distressed) as are secure infants, although they appear unperturbed and rarely cry (Sroufe & Waters, 1977.) Interestingly, these infants were the most difficult to recognize and categorize for many lay psychologists who incorrectly assumed that the infant merely wished to continue playing (L. Alan Sroufe, personal communication). It has been convincingly argued (e.g., Cassidy & Kobak, 1988; Renken, Egeland, Marvinney, Mangelsdorf, & Sroufe, 1989; Sroufe, 1989) that the lack of empathic connection and alienation inherent in avoidant attachment relationships predicts later externalizing behavior problems such as negative peer interactions, unprovoked aggression, frequent hostility, exploitation of the vulnerable, and disruption of the classroom routine (LaFreniere & Sroufe, 1985; Sroufe, 1983).

Insecure - Ambivalent/Resistant. Infants are considered insecure - ambivalent/resistant (classified as "C") when they appear preoccupied with the mother throughout the Strange Situation. Behavior is marked by increased emotionality, little exploration, and an inability to be settled by the parent. The interaction style is similar to that of enmeshed relationships. Caregiving in this situation is inconsistent and/or intrusive at times. These children are on a schedule of intermittent, unpredictable reinforcement. It has been hypothesized that these children could continue to experience chronic anxiety about whether or not their needs would be met, which would then be related to the future development of Anxiety Disorders, and some support for this hypothesis has been found (Warren, Huston, Egeland, & Sroufe, 1997).

Insecure - Disorganized. Infants classified into a fourth ("D") category termed insecure - disorganized/disoriented display a diversity of behavior which is characterized by a lack of observable goal, purpose, or explanation in the immediate situation. This seems to reflect a collapse of strategy, and it is thus inferred that the child lacks a coherent attachment strategy with respect to the parent (Main, 1991). These children experience unpredictable, dangerous environments, and experience the caregiver as frightening (Main & Hesse, 1990). They face a paradoxical situation in which they are afraid of the very person they naturally and instinctively seek reassurance from. If a child is given a primary classification of disorganized, he or she is also assigned the best fitting alternative from among the other three classifications.

Attachment and Maltreatment.

Main (1996) identifies five attachment-related risk factors. Two of these factors, major separations from and permanent loss of attachment figures, as well as disorganized attachment in response to early maltreatment, are associated with foster children. In fact, some researchers have reported 80% of infant-mother relationships in maltreatment samples are classified as insecure-disorganized (Carlson, Cicchetti, Barnett, & Braunwald, 1989; Lyons-Ruth, Connell, Grunebaum, & Botein, 1990; O'Conner, Sigman, & Brill, 1987). Rutter (1980; 1997) cautions, however, that the concept of insecurity, as well as its classification, may as yet be inadequate to encompass the myriad of individual variations in attachment relationships. Attachment theory is useful, nevertheless, in that it is a relationship construct with developmental properties (e.g., qualitative changes over time), as opposed to a static individual trait construct.

Child abuse represents an extreme dysfunctional parent-child relationship, and because of this has been an area of focus with regards to examining attachment relationships and its connection to the development of psychopathology in the population of maltreated youngsters (Cicchetti, 1989; Erickson, Egeland, & Pianta, 1989). For example, it has been found that there is an increase in depressive symptomotology in maltreated children (Kazdin, Moser, Colbus, & Bell, 1985; Toth, Manly, & Cicchetti, 1992) as well as increased aggressive behavior problems (Lyons-Ruth, 1996), atypical social development (Crittenden, 1989), cognitive delays (Crittenden, 1985), and language delays (Braunwald, 1983; Plough, 1985). Toth and Cicchetti (1996) argue that these bodies of research suggest that the negative representational model may be a central mechanism in the appearance of disturbances in children who have been maltreated. According to the conceptual framework, the experience of maltreatment during childhood may lead to the development of negative representational models of attachment figures, the self, and the self in relation to significant others (Cicchetti, 1991; Crittenden & Ainsworth, 1989). In other words, the maltreated child learns to anticipate such treatment from caregivers (and teachers), selectively attends to stimuli that are consistent with their expectations, and behaves in such a way so as to evoke caregiver behavior that is consistent with their negative view. These "negative working models" may then be reinforced as the child moves from one placement to another before they are either: 1) reunified, 2) adopted, or 3) placed in long-term treatment. Unfortunately, by that time the model may be firmly entrenched and highly resistant to change. Sroufe (1989) found that teachers developed characteristic styles of relating to specific children on the basis of the child's attachment status. For example, teachers expected children with secure histories (B) to comply with requests, to follow classroom rules and standards, and to engage in age-appropriate behavior. Children with histories of avoidance (A) were shown more discipline and control, lower expectations for compliance, less warmth, and sometimes anger. Children with histories of anxious attachment (C) were controlled by the teacher as well, but also were shown more nurturance and tolerance. Teachers also made more allowances for them and indulged them in their dependency needs.

A Developmental Perspective.

The adoption of a developmental perspective provides considerable potential for understanding normal, as well as abnormal behavior. The emphasis in a developmental perspective is on understanding the organizational patterns of behavior - the *process* of the qualitative nature of change amongst the precursors and subsequent transformations of the behavior or psychological construct in question. Furthermore, the approach implies a consideration of both the normal and abnormal processes and patterns of adaptation such that behavioral and emotional disturbance reflects a succession of adaptations which occur over the course of time and which are governed by the same principles as those which dictate normal development. In this model, attachment is conceptualized as a normal developmental process, and insecurity is viewed

as a risk factor which interacts with other vulnerabilities in the child and family system (Greenberg, DE Klyen, Speltz, & Endriga, 1997).

Bowlby (1988) conceptualized a model of "developmental pathways" in which the particular pathway being followed at any given point in time is determined by the interaction of the personality as it has thus far developed, prior adaptation, and the current environmental circumstances. The emphasis is on patterns of adaptation and/or maladaptation which precede specific symptoms and/or overt psychopathology, and *not* on particular attachment classifications of individuals. There are five major implications of this model which have been derived and developed by Sroufe and colleagues (Sroufe, 1989; 1997; Sroufe & Rutter, 1984; Sroufe, Egeland, & Kruetzer, 1990), some of which are of great import to the practice of school psychology.

1. Disorder as deviation over time. This implies that pathology is not something which one was born with, but rather that pathology involves a succession of developmental deviations which place the individual at risk for disturbance or pathology. To use the pathways analogy, pathology involves a series of maladaptive patterns and/or responses to stressors which progressively moves the individual towards a pathway leading to disorder. This view is in contrast to that of the medical model as it is manifested in the classificatory system of the Diagnostic and Statistical Manual of Mental Disorders - Fourth Edition (American Psychiatric Association, 1994), which emphasizes distinct categories of disturbances. Although this seems a simple distinction, the ramifications of accepting a "pathways" view in lieu of the current system are quite profound and suggest the construction of classifications schemes which focus on patterns of maladaptation (Sroufe, 1997), as opposed to discrete categories of disorders.

2. Multiple pathways to the same outcome. This suggests that individuals who begin on different pathways may converge towards similar patterns of adaptation or maladaptation. Thus, although the manifest behavior may be similar (for example, disruptive behavior), the origins and pathways may be quite diverse, and the interventions which are indicated for each individual may be a function of the *pathway* and not the overt behavior. This has important implications for the practice of school psychology particularly as it applies to assessment, categorization/labeling of children, and interventions. For example, a child who is manifesting behavior which could be categorized as conduct disordered and thus not meet the definition of 'serious emotional disturbance" may have started out on a pathway of insecure attachment and may actually be seriously compromised in his or her ability to relate to others due to a negative internal working model (and thus may qualify for categorical services). Conversely, a child who has been determined eligible for placement may be more appropriately served in the regular education program.

3. Different outcomes of the same pathway. Individuals who begin on a similar pathway may diverge, ultimately exhibiting quite different behavioral manifestations of adaptation or maladaptation. Sroufe (1997) cautions however, that even though there is phenotypic dissimilarity of outcomes, the possibility remains that the adaptation or maladaptation could be considered as part of the same "family". In other words, although there may be seemingly diverse outcomes, the patterns may be conceptually consistent with the child's earlier attachment status and ongoing care received. For example, a child may be emotionally isolated at one age and a bully at another age, but may have a history of avoidant attachment (Sroufe & Jacobvitz, 1989).

4. Change is possible at many points. Although the individual may deviate from the normal pathway, interventions or other environmental circumstances such as the successful mastery of an important developmental transition may lead back toward the normal pathway. This is an exceedingly important point for school psychologists who not only design programmatic interventions for individual children, but who also are responsible for the development and implementation of broad, school-wide interventions.

5. Change is constrained by prior adaptation. This implication suggests that the longer a particular developmental pathway is followed, the more unlikely it is that there will

be divergence from that pathway. For example, the longer an individual is on a normal developmental pathway, the more unlikely that there will be divergence towards maladaptation despite periods of stress. Likewise, the longer a maladaptive pathway has been followed, the less likely it becomes that the individual will be able to return to the normal or adaptive pathway. The implication is that the earlier an intervention can occur, the better.

Behavioral manifestations of maltreatment

Egeland and Sroufe (1981) identified patterns of child maltreatment and resultant child adaptations from a longitudinal, prospective study of 267 high risk families. This study also allowed the investigators to distinguish the consequences of maltreatment from poverty and low SES. The results of this study found that, in general, all maltreatment groups evidenced insecure attachments and a pattern of declining functioning as measured by a tool-use problem-solving task and the Bayley Scales of Infant Development. Maltreated children had difficulty coping with a frustrating situation, performed poorly in a teaching situation, and adapted poorly to preschool. They evidenced poorer social competence than their age mates from similar backgrounds who had not been maltreated. Furthermore, these patterns were found to be stable into the preschool years (Egeland, Sroufe, & Erickson, 1983), middle childhood (Sroufe, et al., 1990), preadolescence (Urban, Carlson, Egeland, & Sroufe, 1991), and adolescence (Weinfeld, Ogawa, & Sroufe, 1997).

Crittenden's research on approximately 300 families found similar results (1981; 1985; 1988a; 1988b; 1989). Maltreated children in her study tended to exhibit atypical social development, significant cognitive delays and associated learning and performance problems, and language and communication problems. Table 1 summarizes the results of both Crittenden's and Egeland and Sroufe's findings. It should be noted that these patterns are *generalizations* , and thus specific children or families will not fit any pattern perfectly. In addition, many families who do not engage in the maltreatment of their children nevertheless may display these same patterns (in terms of attachment), and their children may have the same developmental problems.

Table 1.
Summarization of Crittenden's (1981; 1985; 1988a; 1988b; 1989) and Egeland & Sroufe's (1981; Egeland, Sroufe, & Erickson, 1983) research results on the effects of maltreatment of children.*

	Attachment Status	Cognitive Development	Social Development	Classroom Behavior
Neglect	insecure-anxious (Type C)	difficulty learning from the effects of their behavior, significant cognitive delays	poor peer relations; treats other children as objects; may be a victim of others	restless, inattentive, impulsive, highly dependent upon teachers
Physical Abuse	insecure- disorganized (Type D) & insecure-avoidant (Type A)	cognitive delays; academic achievement below average; difficulty learning	very poor peer relations; often identified as a bully; display many disruptive behaviors; express a large amount of negative emotion	very hyperactive, noncompliant with teachers; elicit teacher anger
Abuse & Neglect	insecure-disorganized (Type D) with secondary classifications of A or C	process problems & deficits; cognitive delays; multiple learning problems	very poor peer relations; seem to expect rejection; behavior with peers often a combination of anxious withdrawal & angry aggression.	may alternately display whiny, clingy dependent behavior with noncompliant, defiant, and hostile behavior
Adequate Caregiving	secure (Type B)	adequate, normal cognitive development & achievement	cooperative, well-liked by peers, increased empathy for others; appropriately assertive	independent & resourceful; follows classroom rules & social conventions

* Abuse patterns have been collapsed across and within studies.

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Implications for Assessment. Beginning in the early preschool years (ages 2-3), children become capable of utilizing symbolic forms of mental representations (Piaget, 1954). It then becomes possible for the internal working model to be measured using symbolic representation as opposed to actual attachment behavior (as with the Strange Situation). For example, George and Solomon (George & Solomon, 1994; Solomon, George, & DeJong, 1995) have developed a classification system based on the Bretherton doll-play stories which focuses on the separation reunion stories. The technique is a modification of the method developed by Bretherton and colleagues (Bretherton, Ridgeway, & Cassidy, 1990) which is based on observation of children's doll-play around attachment-related themes. Stories are introduced with a story stem that describes what has happened and the child is asked to describe and enact what happens next. Symbolic play is facilitated with the use of a furnished doll-play platform, extensive props, and a variety of dolls for the child's stories. Intercoder reliability has been demonstrated at 71% for the entire sample and 95% for the disorganized versus organized (ABC) classifications. These classifications were then related to attachment classifications based on reunion behavior in the Strange Situation (Main & Cassidy, 1988), with agreement found to be 79% (George & Solomon, 1996). Thus, the introduction and validation of measures of this sort, in addition to Ainsworth's Strange Situation, have demonstrated the existence of the internal mental representations of attachment. Although this has been valuable for the research community, few practicing clinicians have undertaken the rigorous and extensive training these measurement methods require. The administration and scoring of the Strange Situation, Adult Attachment Interview, and the Attachment Doll-Play technique all require extensive training and a prolonged period in which the clinician must become reliable at interpreting the measures. These procedures are unlike behavior coding which involves tallies of relevant, precisely defined acts. The classification process requires matching a particular case to a multidimensional, categorical template or prototype. Unfortunately, few school psychologists have the opportunity or inclination to obtain such training, or to devote the time requirements to administer, score, and interpret such measures. Most school psychologists rely on standardized cognitive instruments, clinical interviews, behavioral checklists, and case conferencing to form their assessments and subsequent interventions. Fortunately, armed with a solid theoretical knowledge base, school psychologists are in a position to make intelligent inferences regarding a child's internal working model of relationships.

The developmental pathways model places an emphasis upon the examination of the child's history, as well as the behavioral and situational context of particular behaviors. The pathways approach also implies a departure from the traditional role of the school psychologist in that it challenges one to look beyond the immediate press for categorization. This is in contrast to the frequency or categorical data that most behavioral checklists supply. In this regard, assessment resembles that of a functional analysis, but instead of the primary emphasis being placed upon antecedents and consequences from a behavioral perspective, the context and meaning of behavior is viewed with an eye towards understanding patterns of adaptation and maladaptation, as well as the developmental transformations of the basic underlying structure. This is not to suggest that behavioral functional analysis is incompatible with a developmental perspective, or that it is valueless. On the contrary, it is argued that there are two important levels of analysis: one at the operant level and one at the effects of the behaviors on the relationship. For example, some "problem" behaviors of children may have developed as being necessary to engage the parents, or to avoid intimacy in what the child may consider to be a fearful situation. In other words, these behaviors serve a functional value for the child who then transfers this learning to other relationship-oriented situations such as the teacher and peers. The underlying value of the behavior to the child may not be readily apparent,

and thus it is important to return to the theoretical base (in this case attachment) to interpret and understand the behavior (James, 1994). Utilizing a theory-based evaluation of this nature allows the psychologist to construct a theory of change for individuals, special populations, and school-wide interventions as well.

In practical terms, this kind of assessment entails some serious detective work on the part of the psychologist who must obtain and review records with a critical appraisal of the information contained therein. Consultation with the foster parents, social workers, and current and previous teachers becomes essential to the assessment process. At times this is problematic with foster children as it is common practice for children to be placed with little or no background information supplied to the foster parent (Palmer, 1996; Steinhauer, 1991). In those instances, it is important for the psychologist to thoroughly review the court documents which are frequently quite extensive on these children. Observation of playground and classroom behavior with a critical eye towards analyzing interpersonal interactions may be especially useful.

Implications for Interventions. Thus far, there is no research base to suggest that certain classes of interventions should be matched (or effective) with certain categories of maltreatment (or attachment status). In general, the research literature points to the importance of a positive relationship with a significant adult, and suggests that it may act as a buffer against negative experiences (Egeland et al., 1988; Masten et al., 1990; Toth & Cicchetti, 1996). Fahlberg (1991) suggests that it is useful to first identify an "island" of health in the child, or to understand how the child learned the particular behavior. It follows, she argues, that if the value of the purpose or function of the behavior can be acknowledged, then the adults can help the child to learn better, more adaptive ways to meet the underlying needs without focusing exclusively on the undesirable behavior. This is in keeping with a developmental perspective wherein problem behaviors are viewed as adaptations (Sroufe, 1997), and thus subject to change.

The developmental pathways model suggests that change is possible at many points. Successful mastery of important developmental tasks can potentially influence the path of development back towards that of normal (Sroufe, 1990; 1997). Seen from this perspective, mastery experiences in both the cognitive and social-emotional domains can be important. For example, academic achievement and the development of appropriate, peer relationships can be "normalizing" experiences for maltreated foster children (and others for that matter). Thus, a focus on the creation of developmentally appropriate curriculum that is relevant and meaningful to the learner, that connects what is being learned with the learner's existing cognitive and social resources, and that occurs in an environment that contains positive interpersonal relationships and interactions should prove to be beneficial to foster and other children whose development may be diverging from the normal pathway (Lambert & McCombs, 1998).

Direct Interventions. Individual or group work with maltreated children can be helpful (Egeland et al., 1988; Masten et al., 1990; Toth & Cicchetti, 1996). There are many models of therapeutic interventions, and a full discussion of technique is beyond the scope of this paper; however, most contain the same elements or goals: 1) exploring maltreatment experiences and losses, 2) helping children to perceive and respond to the complexity of their actual situations as opposed to processing information in the distorted manner of their internal working models of relationships, 3) improve affective regulation, 4) modify maladaptive internal working models of relationships, and 5) changing negative behavior patterns (Crittenden, 1992; Delany, 1991; Fahlberg, 1991; James, 1994; Mills & Allan, 1992).

Ongoing consultation with teachers, foster parents, and social workers is considered essential to the success of direct interventions with maltreated foster children. To quote segments from Principle 6 from the Learner-Centered Psychological Principles (APA, 1995):
" Learning does not occur in a vacuum. Envi-

ronmental factors can have strong positive or negative influences on learning. The nature of the classroom environment, particularly the degree to which it is nurturing or not, can also have significant impacts on student learning." This principle speaks to the importance of contextual factors on the learning process, factors such as the community, social class, family configuration, home environment, and of course, the classroom environment. As one might deduce from this brief list, environmental factors are of great importance to foster children, many of whom are placed in new communities with new family configurations and unfamiliar home environments. All of these factors should be understood and interventions coordinated based upon that understanding in order to facilitate the child's learning and development. In this spirit, teachers and foster parents are integral partners in the implementation of interventions with foster children. For example, they need to be informed participants in the ecology of the child's learning experience and any interventions conducted. Teachers and foster parents may need help in understanding the meaning and function of the behavior problems that many of these children present. They need to understand that children frequently behave in ways that elicit further confirmation of their internal working models. These behaviors may at times seem completely paradoxical and counter-intuitive to the compassionate teacher or foster parent. For example, Why would a child distance themselves from a caring, nurturing adult who is interacting with them in a safe environment? The answer lies in the child's distorted perception of safety. They behave in terms of the world they have known, selectively attend to information, and distort and influence relationships and their current environment to confirm their existing models of themselves and others (Sroufe & Fleeson, 1986). Thus, adults who interact with these children on a daily basis need to have the following abilities or skills: 1) the ability to consider issues which underlie the child's behavior, 2) the skill to recognize and appropriately intervene when disturbed emotions and behaviors surface, 3) the ability to remain emotionally available to the child, and 4) the skill to recognize one's own reactive maladaptive response patterns to the child (James, 1994).

Indirect Interventions. As a school-based mental health professional, the school psychologist is in a strategic position to provide a comprehensive and holistic approach to the promotion of learning and development for all children. The developmental pathways model described in this paper suggests that there are a multitude of opportunities for the intrepid school psychologist to design structures, policies, and programs within the school system which not only promote learning and achievement, but which also provide for positive partnerships between parents, educators and the community. Virtually *every* developmental milestone or transition becomes an opportunity for successful mastery and health. Relationships at every level, from teacher to principal to school to district, become an opportunity to mitigate against negative, punishing, and painful experiences. For example, interventions which focus on the people in the system (teachers in particular) have been shown to promote student motivation and achievement (McCombs, 1998). The interventions focus on the creation of a positive context for learning at all levels (classroom, school, district), combined with the necessary supports to enact change of this nature. McCombs (1998) argues further that "teachers need to understand theories of learning and psychological functioning that can explain the interrelationships between higher order interrelationships between higher order metacognitive processes, affect, and motivation" (p. 380). Educating teachers through in-service on the needs of and interventions with foster children may thus be helpful. Knowledge is necessary but insufficient. Teachers not only need skills and strategies for capitalizing on this knowledge; they also need ongoing consultation on problems of practice as they arise (Elmore, Peterson, & McCarthy, 1996).

The development of important relationships with the foster parents in the community and with the caseworkers in the Children's Protection Unit of Social Services will likely enhance communication and coop-

erative efforts to serve these children. In some cases, fostering communication and enhancing these community relationships may serve to stabilize the placement and prevent the need for yet another move in these children's lives.

Programs which target newly entering students and which facilitate the development of appropriate social and peer relationships and academic competence may help all students successfully navigate this important and sometimes difficult transition. Additionally, these sorts of programs may contribute to the school's overall commitment to all its students and its sense of being a caring community within a community.

Many of the most successful schools view themselves as socializing institutions with a mission to prepare children for productive participation in adult society (Schorr, 1997). These schools have become partners in community efforts to reform services and build communities. School success requires more than formal, specialized, or categorical services. It requires strong relationships amongst informal helping networks, including church, family support services, youth development programs, mentoring, and recreational opportunities to name a few. This statement is not meant to imply that schools should take sole responsibility for a community-building agenda; however, it does place schools as a prominent figure in the community. As the person with the psychological knowledge base, the school psychologist is in focal position to articulate and coordinate these relationships so that the enhancement of children's learning and development is maximally impacted.

Conclusion

The astute reader will recognize that although this paper has focused on the utilization of attachment theory as a developmental model for assessment and interventions with the disturbed attachments of maltreated foster children, in reality the approach presented is a model for the conceptualization of childhood relational disturbances of all kinds, and is not limited to foster children since the same laws govern normal as well as abnormal development (Cicchetti, 1984; Cicchetti & Sroufe, 1976; Sroufe, 1997.) This perspective and theoretical knowledge base allows the psychologist to construct a theory of change which transcends categorical classifications and questions of eligibility, and reframes interventions in terms of how best to positively impact a child's (or a special population of children, or all children) developmental trajectory. However, given the backgrounds of many foster children and the multitude of problems they frequently present to the school system, the model and approach is particularly useful and promising.

The developmental pathways model, in conjunction with attachment theory, suggests that school systems and the relationships of people who interact in them should be designed with a template for secure attachment in mind. This requires a fundamental restructuring of instructional ideology and the nature of schools and schooling which emphasizes the value of genuine, caring relationships without sacrificing expectations and high standards for all students.

References

Ainsworth, M. D., Blehar, M. C., Waters, E., & Wall, S. (1978). *Patterns of attachment: A psychological study of the Strange Situation.* Hillsdale, NJ: Erlbaum.

American Psychiatric Association. (1994). *Diagnostic and statistical manual for mental disorders: Fourth edition.* Washington, DC: Author.

American Psychological Association Board of Educational Affairs. (1995, Dec). *Learner-centered psychological principles: A framework for school redesign and reform.* Washington, DC: Author. Retrieved December 23, 1998 from the World Wide Web:http://www.apa.org/ed/lcp.html.

Arend, R., Gove, F., & Sroufe, L. A. (1979). Continuity of individual adaptation from infancy to kindergarten: A predictive study of ego-resiliency and curiosity in preschoolers. *Child Development, 50*, 950-959.

Barth, R. P., Berrick, J. D., Courtney, M., & Albert, V. (1992). *Pathways through child welfare services.* Final report, School of Social Welfare, Family Welfare Research Group, University of California, Berkeley.

Bowlby, J. (1969/1982). *Attachment and Loss.* (Volume 1). New York: Basic Books. (Original work published 1969.)

Bowlby, J. (1980). *Attachment and Loss.* (Volume 3). New York: Basic Books.

Bowlby, J. (1988). *A secure base: Clinical implications of attachment theory.* London: Routledge & Kegan Paul.

Braunwald, S. R. (1983). Why social interaction makes a difference: Insights from abused toddlers. In R. Golinkoff (Ed.), *The transition from prelinguistic to linguistic competence.* Hillsdale, NJ: Erlbaum.

Bretherton, I., Ridgeway, D., & Cassidy, J. (1990). Assessing internal working models of the attachment relationship: An attachment story completion task for 3-year-olds. In M.T. Greenbergh, D. Cicchetti, & E.M. Cummings (Eds.), *Attachment in the preschool years.* (pp. 273-308). Chicago: University of Chicago Press.

Carlson, V., Cicchetti, D., Barnett, D., & Braunwald, K. (1989). Disorganized/disoriented attachment relationships in maltreated infants. *Developmental Psychology, 25,* 525-531.

Carnegie Corporation of New York. (1994). *Starting points: Meeting the needs of our youngest children* (abridged version). New York: Author.

Cassidy, J., & Kobak, R. R. (1988). Avoidance and its relevance to other defensive processes. In J. Belsky & T. Nezworski (Eds.), *Clinical implications of attachment.* Hillsdale, NJ: Erlbaum.

Childrens Defense Fund. (1998). *The State of America's Children.* Washington: DC: Author.

Cicchetti, D. (1984). The emergence of developmental psychopathology. *Child Development, 55,* 1-7.

Cicchetti, D. (1989). How research on child maltreatment has informed the study of child development: Perspectives from developmental psychopathology. In D. Cicchetti and V. Carlson (Eds.), *Child maltreatment: Theory and research on the causes and consequences of child abuse and neglect* (pp. 377-431). New York: Cambridge University Press.

Cicchetti, D. (1991). Fractures in the crystal: Developmental psychopathology and the emergence of self. *Developmental Review, 11,* 271-287.

Cicchetti, D., & Sroufe, L. A. (1976). The relationship between affective and cognitive development in Down's syndrome infants. *Child Development, 47,* 920-929.

Cicchetti, D. & Barnett, D. (1991). Attachment organization in maltreated preschoolers. *Development and Psychopathology, 3,* 397-411.

Craig, C. & Herbert, D. (1997). *The State of the children: an examination of government-run foster care.* National Center for Policy Analysis, Policy Report No. 210.

Crittenden, P. M. (1981). Abusing, neglecting, problematic, and adequate dyads: Differentiating by patterns of interaction. *Merrill-Palmer Quarterly, 27,* 1-18.

Crittenden, P. M. (1985). Maltreated infants: Vulnerability and resilience. *Journal of Child Psychology and Psychiatry, 26,* 85-96

Crittenden, P. M. (1988a). Distorted patterns of relationship in maltreating families: The role of internal representational models. *Journal of Reproductive and Infant Psychology, 6,* 193-199.

Crittenden, P. M. (1988b). Family and dyadic patterns of functioning in maltreating families. In Browne, C. Davies, & P. Stratton (Eds.) *Early prediction and prevention of child abuse.* London: Wiley.

Crittenden, P. M. (1989). Teaching maltreated children in the preschool. *Topics in Early Childhood Special Education, 9,* 16-32.

Crittenden, P. M. (1992). Quality of attachment in the preschool years. *Development and Psychopathology, 4,* 209-241.

Crittenden, P. M., & Ainsworth, M. D. S. (1989). Attachment and child abuse. In D. Cicchetti and V. Carlson (Eds.), *Child maltreatment: Theory and research on the causes and consequences of child abuse and neglect* (pp. 432-463). New York: Cambridge University Press.

Delany, R. J. (1991). *Fostering Changes: Treating attachment-disordered foster children.* Colorado: Walter J. Corbett Publishing.

Egeland, B., & Brunnquell, D. (1979). An at-risk approach to the study of child abuse: Some preliminary findings. *Journal of the American Academy of Child Psychiatry, 18,* 219-235.

Egeland, B., & Sroufe, L. A. (1981). Attachment and early maltreatment. *Child Development, 52,* 44-52.

Egeland, B., Sroufe, L. A., & Erickson, M. (1983). The developmental consequence of different patterns of maltreatment. *Child Abuse & Neglect, 7,* 459-469.

Egeland, B., Jacobvitz, D., & Sroufe, A. (1988). Breaking the cycle of abuse. *Child Development, 59,* 1080 - 1088.

Elmore, R. F., Peterson, P. L., & McCarthey, S. J. (1996). *Restructuring in the classroom: Teaching, learning, and school organization.* San Francisco: Jossey-Bass.

Erickson, M., Egeland, B., & Pianta, R. (1989). The effects of maltreatment on the development of young children. In D. Cicchetti and V. Carlson (Eds.), *Child maltreatment: Theory and research on the causes and consequences of child abuse and neglect* (pp. 647-684). New York: Cambridge University Press.

Fahlberg, V. (1991). *A Child's Journey Through Placement.* Indianapolis, IN: Perspectives Press.

George, C. & Solomon, J. (1994). *Six-year attachment doll play procedures and classification system.* Unpublished coding manual. Mills College, Oakland, CA.

George, C. & Solomon, J. (1996). Representational models of relationships: Links between caregiving and attachment. In C. George & J. Solomon (Eds.), *Defining the Caregiving System, Infant Mental Health Journal,* (Vol 17). New York: John Wiley.

Greenberg, M.T., DEKlyen, M., Speltz, M. L., & Endriga, M. C. (1997). The role of attachment processes in externalizing psychopathology in young children. In L. Atkinson & K. J. Zucker (Eds.), *Attachment and Psychopathology.* The Guilford Press: New York, NY.

Jacobsen, T., Edelstein, W., & Hofmann, V. (1994). A longitudinal study of the relation between representations of attachment in childhood and cognitive functioning in childhood and adolescence. *Developmental Psychology, 30,* 112-124.

Jacobsen, T. & Hofmann, V. (1997). Children's attachment representations: Longitudinal relations to school behavior and academic competency in middle childhood and adolescence. *Developmental Psychology, 33,* 703-710.

James, B. (1994). *Handbook for Treatment of Attachment-Trauma Problems in Childhood.* New York: Lexington Books.

Kazdin, A. E., Moser, J., Colbus, D., & Bell, R. (1985). Depressive symptoms among physically abused and psychiatrically disturbed children. *Journal of Abnormal Psychology, 94,* 298-307.

Klee, L., Kronstadt, D., & Zlotnick, C. (1997). Foster care's youngest: A preliminary report. *American Journal of Orthopsychiatry, 67(2),* 290-299.

LaFreniere, P. J., & Sroufe, A. (1985). Profiles of peer competence in the preschool: Interrelations between measures, influence of social ecology, and relation to attachment history. *Developmental Psychology, 21,* 56-66.

Lambert, N. M. & McCombs, B. L. (1998). Introduction: Learner-centered schools and classrooms as a direction for school reform. In N. M. Lambert & B. L. McCombs (Eds.), *How Students Learn.* Washington, DC: American Psychological Association.

League of Women Voters of California. (July, 1998). *Juvenile Justice in California Part II: Dependency System.* Education Fund, Juvenile Justice Study Committee. Retrieved April 14, 1999 from the World Wide Web: http://ca.lwv.org/jjds/appxi.html.

Lyons-Ruth, K. (1996). Attachment relationships among children with aggressive behavior problems: The role of disorganized early attachment patterns. *Journal of Consulting and Clinical Psychology, 64,* 64-73.

Lyons-Ruth, K., & Block, D. (1996). The disturbed caregiving system: Relationships among childhood trauma, maternal caregiving, and infant affect and attachment. *Infant Mental Health Journal, 17,* 257-275.

Lyons-Ruth, K., Connell, D. B., Grunebaum, H., & Botein, S. (1990). Infants at social risk: Maternal depression and family support services as mediators of infant development and security of attachment. *Child Development, 61,* 85-98.

Main, M. (1973). *Exploration, play, and cognitive functioning as related to child-mother attachment.* Unpublished doctoral dissertation, Johns Hopkins University.

Main, M. (1983). Exploration, play, and cognitive functioning as related to child-mother attachment. *Infant Behavior and Development, 6,* 167-174.

Main, M. (1991). Metacognitive knowledge, metacognitive monitoring, and singular (coherent) versus multiple (incoherent) models of attachment: Findings and directions for future research. In C. M. Parkes, J. Stevenson-Hinde & P. Marris (Eds), *Attachment Across the Life Cycle* (pp. 127-159). London: Routledge.

Main, M. (1996). Introduction to the special section on attachment and psychopathology: Part 2. An Overview. *Journal of Consulting and Clinical Psychology, 64,* 1-8.

Main, M., & Cassidy, J. (1988). Categories of response to reunion with the parent at age 6: Predictable from infant attachment classifications and stable over a one-month period. *Developmental Psychology, 24,* 1-12.

Main, M., & Hesse, E. (1990). Parents' unresolved traumatic experiences are related to infant disorganized attachment status. In M. Greenberg, D. Cicchetti, & E. M. Cummings (Eds.), *Attachment in the Preschool Years* (pp. 161-182). Chicago: University of Chicago Press.

Main, M., Kaplan, N., & Cassidy, J. (1985). Security in infancy, childhood, and adulthood: A move to the level of representation. In I. Bretherton & E. Waters (Eds.), *Growing points of attachment theory and research. Monographs of the Society for Research in Child Development.* (Serial Number 209), *50,* 66-104.

Masten, A. S., Best, K. M., & Garmenzy, N. (1990). Resilience and development: Contributions from the study of children who overcome adversity. *Development and Psychopathology, 2,* 425-444.

McCombs, B. L. (1998). Integrating metacognition, affect, and motivation in improving teacher education. In N. M. Lambert & B. L. McCombs (Eds.), *How Students Learn.* Washington, DC: American Psychological Association.

Mills, B. & Allan, J. (1992). Play therapy with the maltreated child: Impact upon aggressive and withdrawn patterns of interaction. *International Journal of Play Therapy, 1,* 1-20.

O'Conner, M., Sigman, M., & Brill, N. (1987). Disorganization of attachment in relation to maternal alcohol consumption. *Journal of Clinical and Consulting Psychology, 55,* 831-836.

Palmer, S. E. (1996). Placement stability and inclusive practice in foster care: an empirical study. *Children and Youth Services Review, 18,* 589-601.

Pancake, V. (1985). *Continuity between mother-infant attachment and ongoing dyadic peer relationships in preschool.* Paper presented at the biennial meeting of the Society for Research in Child Development, Toronto.

Piaget, J. (1954). *The Construction of Reality in the Child.* New York: Basic Books.

Pinkey, D.S. (1994). America's sickest children. *Youth Law News, 25*(6), 15-18.

Plough, A. (1985). *Maltreatment and mother-toddler interaction.* Unpublished doctoral dissertation, University of Virginia.

Renken, B., Egeland, B., Marvinney, D., Mangelsdorf, S., & Sroufe, L. A. (1989). Early childhood antecedents of aggression and passive-withdrawal in early elementary school. *Journal of Personality, 57,* 257-281.

Rutter, M. (1980). Attachment and the development of social relationships. In M. Rutter (Ed.), *Developmental Psychiatry* (pp.267-279). Washington, DC: American Psychiatric Press.

Rutter, M. (1997). Clinical implications of attachment concepts: retrospect and prospect. In L. Atkinson & K. J. Zucker (Eds.). *Attachment and Psychopathology* NY: Guilford Press.

Schorr, L. (1997). *Common Purpose.* NewYork: Anchor Books.

Solomon, J., George, C., & DeJong, A. (1995). Children classified as controlling at age six: Evidence of disorganized representational strategies and aggression at home and at school. *Development and Psychopathology, 7,* 447-463.

Sroufe, L.A. (1983). Infant-caregiver attachment and patterns of adaptation in preschool: The roots of maladaptation and competence. In M. Perlmutter (Ed.), *Minnesota Symposia on Child Psychology* (Vol. 16., pp. 41-83). Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.

Sroufe, L. A. (1989). Relationships, self and individual adaptation. In Arnold J. Sameroff & Robert N. Emde (Eds.) *Relationship disturbances in early childhood: A developmental approach.* New York: Basic Books.

BEST COPY AVAILABLE

Sroufe, L. A. (1997). Psychopathology as an outcome of development. *Development and Psychopathology, 9,* 251-268.

Sroufe, L. A., Egeland, B., & Kreutzer, T. (1990). The fate of early experience following developmental change: Longitudinal approaches to individual adaptation in childhood. *Child Development, 61,* 1363-1373.

Sroufe, L. A. & Fleeson, J. (1986). Attachment and the construction of relationships. In W. W. Hartup & Z. Rubin (Eds.), *Relationship and Development.* Hillsdale, NJ: Earlbaum Associates

Sroufe, L. A. & Jacobvitz, D. (1989). Diverging pathways, developmental transformations, multiple etiologies and the problem of continuity in development. *Human Development,* 32, 196-203.

Sroufe, L. A. & Rutter, M. (1984). The domain of developmental psychopathology. *Child Development, 55,* 17-29.

Sroufe, L. A., & Waters, E. (1977). Heart rate as a convergent measure in clinical and developmental research. *Merrill-Palmer Quarterly, 23,* 3-27.

Steinhauer, P. D. (1991). *The least detrimental alternative: A systematic guide to caseplanning and decision making for children in care.* Toronto: University of Toronto Press.

Tatara, T. (1990). *Characteristics of children in substitute and adoptive care.* Washington, DC: American Public Welfare Association.

Tatara, T. (1993). U. S. child substitute care flow data for FY 92 and current trends in the state child substitute care populations. *VCIS (Voluntary Cooperative Information System) Research Notes* (No. 9). Washington, DC: American Public Welfare Association.

Toth, S. L., & Cicchetti, D. (1996). Patterns of relatedness, depressive symptomotology, and perceived competence in maltreated children. *Journal of Consulting and Clinical Psychology, 64,* 32-41.

Toth, S. L., Manly, J. T., & Cicchetti, D. (1992). Child maltreatment and vulnerability to depression. *Development and Psychopathology, 4,* 97-112.

Urban, J., Carlson, E., Egeland, B, & Sroufe, A. (1991). Patterns of individual adaptation across childhood. *Development and Psychopathology, 3,* 445-460.

U.S. Department of Health and Human Services, Children's Bureau, *Child Maltreatment 1996: Reports From the States to the National Child Abuse and Neglect Data System.* Washington, DC: U.S. Government Printing Office, 1998.

U.S. General Accounting Office. (1994). *Foster care: Parental drug abuse has alarming impact on young children* (GAO/HEHS-94-89). Washington, DC: Author.

Warren, S. L., Huston, L., Egeland, B., Sroufe, L. A. (1997). Child and adolescent anxiety disorders and early attachment. *Journal of American Academy of Child and Adolescent Psychiatry, 36,* 637-644.

Weinfield, N. S., Ogawa, J. R., & Sroufe, L. A. (1997). Early attachment as a pathway to adolescent peer competence. *Journal of Research on Adolescence, 7,* 241-265.

Westat, Inc. (1991). *A National evaluation of Title IV-E foster care independent living program for youth: Phase II final report, Vols. I and II.* Rockville, MD: Author.

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DIAGNOSIS OF ATTENTION-DEFICIT/HYPERACTIVITY DISORDER (ADHD) IN CHILDHOOD

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Abstract: From a survey of the recent literature this article discusses the process of diagnosing Attention-deficit/Hyperactivity Disorder (ADHD) in children. First, the article discusses diagnostic issues generated by the Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association, 1994). Then it presents procedures recommended by a sample of publications that discuss ADHD diagnosis. Results of this literature review found rating scales, interviews, observations and laboratory/psycho-educational testing to be the most frequently recommended diagnostic techniques. Other less frequently recommended procedures were medical evaluations, peer assessments, and reviews of school records.

Because there is no single procedure that will reliably diagnose ADHD (Lin-Dyken & Wolraich, 1991; Morriss, 1992, March/April), its diagnosis is a complex process (Anastopoulos & Barkley, 1992). Further complicating matters are the variety of other disorders can co-exist with and/or cause ADHD-like symptoms (Barkley, 1990; Schaughency & Rothlind, 1991; Swanson, 1992). As a result, this diagnosis is a time consuming process ideally involving multiple diagnostic procedures (Anastopoulos & Barkley, 1992; Atkins & Pelham, 1991; Barkley, 1990, 1991; Guevremont, DuPaul, & Barkley, 1990; Landau & Burcham, 1996; Schaughency & Rothlind, 1991), obtaining information from multiple sources (Barkley, 1991; Guevremont, et al., 1990; Landau & Burcham, 1996; Schaughency & Rothlind, 1991) and conducted by several different specialists (Swanson, 1992).

While it is acknowledged that there is no flawless measure of ADHD (Atkins & Pelham, 1991) a survey of the literature has found significant agreement in recommended assessment procedures. This article will review these procedures. Before doing so, however, it begins with a review of issues generated by the American Psychiatric Association's (1994) ADHD diagnostic criteria.

ADHD Diagnostic Criteria

ADHD is a diagnostic category found in the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (DSM IV) published by the American Psychiatric Association (1994). In *DSM IV* ADHD is placed within the subclass of "Disorders Usually First Diagnosed in Infancy, Childhood, or Adolescence" (pp. 37-121) known as "Attention-Deficit and Disruptive Behavior Disorders" (pp. 78-94). Along with ADHD, this subclass includes Conduct Disorder and Oppositional Defiant Disorder.

According to DSM IV, the primary symptoms of ADHD are developmentally inappropriate degrees of inattention, impulsiveness, and hyperactivity (see Table 1). Using *DSM IV* criteria a child can be diagnosed as Attention-Deficit/Hyperactivity Disorder, Predominantly Inattentive, Predominantly Hyperactive-Impulsive or Combined types. Diagnostic criteria for the Predominantly Inattentive Type require that six or more of the nine symptoms of inattention be present. Criteria for the Predominantly Hyperactive-Impulsive Type require that four or more of the six symptoms of hyperactivity and impulsivity be present. Criteria for the Combined Type require that both Inattentive and Hyperactive-Impulsive criteria be met[1]. Although the specific behavioral symptoms presented by *DSM IV* are self explanatory, other diagnostic requirements deserve further elaboration and will now be discussed.

Symptom duration. First, the criterion behaviors must "have persisted for at least 6 months . . ." (American Psychiatric Association, 1994, p. 84). It has been suggested that strict adherence to this requirement is especially critical when assessing preschoolers. Up to 40% of this population is rated as inattentive and overactive by their parents. However, in the majority of these cases concerns remit within three to six months. In other words, significant inattention and hyperactivity in the three to four-year-old is not necessarily indicative of a persistent pattern of ADHD (Barkley, 1990).

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Developmental level. Second, it is important to note that the diagnostic criteria also begin by specifying that a behavioral criterion is considered to be met only if the behavior is ". . . inconsistent with developmental level" (American Psychiatric Association, 1994, p. 83). According to *DSM IV,* symptoms of inattention are frequently displayed by children with low IQ when the curriculum is too advanced for their developmental level. *DSM IV* states: "In children with Mental Retardation, an additional diagnosis of Attention-Deficit/Hyperactivity Disorder should be made only if the symptoms of inattention or hyperactivity are excessive for the child's *mental age* [italics added]" (p. 83). This means, for example, that if a delayed 12-year-old with a mental age of six-years, displays a criterion behavior in the in a manner typically of a six-year-old, it would not meet *DSM IV* criteria for ADHD. However, if the same child displays criterion behaviors in a manner that is typically of a three-year-old, it would meet *DSM IV* criteria.

Symptom onset. Third, symptom onset must be before the age of seven. *DSM IV* states: "Most parents first observe excessive motor activity when the children are toddlers, frequently coinciding with the development of independent locomotion" (American Psychiatric Association, 1994, p. 82). It is possible that a neurologically comprising event, such as a head trauma or hypoxic injury, may cause ADHD after age seven (Barkley, 1990; Pennington, 1991). Typically, however, if symptom onset is after this age, they are usually caused by something other than ADHD (e.g., substance abuse, learning disabilities, physical illness, etc.) (Pennington, 1991). However, this requirement does not mean that the diagnosis must be made before the age of seven. It can even be made in adulthood if the diagnostician is able to verify that some symptoms were present before the cut-off age.

Multiple setting. Fourth, the problematic symptoms must be present in two or more settings. According to *DSM IV*: "Behavioral manifestations usually appear in multiple contexts, including home, school, work, and social situations" (American Psychiatric Association, 1994, p. 79). Thus, for the diagnosis to be made information should be gathered from two or more different sources and/or settings (e.g., parents and teachers and/or home and school). If the symptoms are only present in one setting then alternative explanations for symptoms must be considered. For example, the presence of a specific learning disability may result in symptoms of ADHD at school, but not in other settings.

Clinical significance. Fifth, *DSM IV* specifies: "There must be clear evidence of clinically significant impairment in social, academic, or occupational functioning" (American Psychiatric Association, 1994, p. 84). Thus, for this diagnosis to be made there must be documentation of the adverse effect of ADHD symptoms. This means, for example, that if an inattentive and hyperactive primary grade child is able to obtain passing grades, follow class and playground rules, and to have appropriate peer relationships, there would be reason to question the application of the ADHD diagnosis.

Differential diagnosis. Finally, the differential diagnosis of this disorder requires that age-appropriate behaviors in active children, Mental Retardation, understimulating environments, oppositional behavior, and other mental disorders including Pervasive Developmental Disorders, Psychotic Disorder, and Other Substance-Related Disorder Not Otherwise Specified be considered and ruled out as primary causes of the observed symptoms before making the diagnosis of ADHD. This requirement points to the fact that a variety of conditions may cause ADHD-like symptoms and that a proper diagnostic procedure must include techniques designed to consider alternative explanations for these symptoms.

Summary. From this discussion of *DSM IV* criteria, the need for several different diagnostic procedures should be apparent. For example, to determine developmental appropriateness of behavior it will be necessary to determine the child's mental age. This may require the use of an intelligence test. Additionally, to document that the age of onset was before the age of seven, and that clinical significance and duration requirements have been met, school record review and/or parent and teacher interviews will be needed.

Also, to ensure that behaviors are displayed in multiple settings, direct observation may be appropriate. Specific recommended diagnostic procedures, such as these, will now be discussed.

Components of the ADHD Diagnosis

Diagnostic Procedures

A sample of the literature that addresses the topic of ADHD diagnosis reveals that a variety of different procedures are utilized. However, most can be classified into one of several procedural categories. Table 2 provides a summary of these categories and the source that advocates their use. Table 3 provides an overview of the questions addressed by each procedure and offers examples of specific techniques. As can be seen the four almost universally recommended procedures are rating scales, interviews, observations, and laboratory and psycho-educational testing. Thus, these procedures will be discussed first. This will be followed by a discussion of other recommended procedures which include the medical evaluation, school record review, and peer assessments.

Rating Scales

Rating scales are the most widely advocated procedure for evaluating children with ADHD (Hinshaw, 1994). All sources reviewed for this paper cite rating scales as being an essential part of the ADHD diagnosis (see Table 2 for references). For example, Hinshaw (1994) states: ". . . rating scales are an indispensable element of the assessment of children with suspected attention deficits and hyperactivity" (p. 32). They have been proven to effectively differentiate children with ADHD from those without this disorder (Barkley, 1990), and relative to other diagnostic procedures are quick and cost effective measures (Guevremont et al., 1990; Parker, 1992; Schaughency & Rothlind, 1991).[2]

Rating scales help to document the presence of ADHD symptoms and provide a normative frame of reference. They allow the diagnostician to assess how deviant the child's behavior is relative to age peers (Anastopoulos & Barkley, 1992; Landau & Burcham, 1996; Parker, 1992; Schaughency & Rothlind, 1991; Silver, 1992). Additionally, rating scales also allow the diagnostician to obtain information used in assessing treatment effectiveness (Barkley, 1990; Guevremont et al., 1990; Landau & Burcham, 1996).

Rating scales are typically administered, scored and interpreted by mental health professionals. Because they are sensitive to the setting of the rater, it is recommended that as many people as possible provide this data. In this way the diagnostician can determine where ADHD symptoms are most problematic. It is suggested that a rater have known the child being rated for at least six weeks (Landau & Burcham, 1996).

Besides measures designed to assess symptom severity and treatment effectiveness [e.g., Conners' (1969) Teacher Rating Scale], it is also recommended that omnibus rating scales be employed (DuPaul, 1992). Measures such as the Child Behavior Check List (Achenbach & Edelbrock, 1983) are helpful in identifying comorbid conditions (Landau & Burcham, 1996) and assist in the generation of alternative hypotheses for ADHD-like symptoms.

Despite their proven effectiveness, as with all other ADHD diagnostic procedures, it is not recommended that rating scales be used by themselves. Morriss (1991, March/April) makes this point when he states: "An attention disorder cannot be diagnosed solely on the basis of a rating scale. There is no rating scale that can be used as a 'test' for ADD" (p. 15). He goes on to point out that when used in this way rating scales can lead to many false positives. Also, Lin-Dyken and Wolraich (1992) point out that when used alone ". . . the sample of children selected will generally include many of those who have aggressive conduct disorder and not just those children with ADHD" (p. 175). Other concerns expressed regarding rating scales include the possibility of rater bias (Atkins & Pelham, 1991; DuPaul, 1992; Parker, 1992), and unrepresentative normative samples in some scales (Hinshaw, 1994).

Interviews

The second most frequently recommended ADHD diagnostic procedure are in-

terviews (see Table 2 for references). Typically conducted by a mental health or medical professional, interviews may obtain data from parents, teachers, and children themselves. According to Hinshaw (1994), Parker (1992), and Pennington (1991) interviews address a number of diagnostic questions including the following: (1) Are ADHD symptoms present? (2) When was the onset of ADHD symptoms? (3) How long have symptoms been present? (4) Is the environment a factor? (5) Is there a family history of ADHD? (6) Is the developmental history suggestive of ADHD? (7) Are there learning difficulties? (8) Are there interpersonal difficulties?

Recommended interview formats include both structured and unstructured procedures. The advantage of structured formats is that they allow for normative comparisons (Anastopoulos & Barkley, 1992) and are sensitive to detecting ADHD (Schaughency & Rothlind, 1991). Hinshaw (1994) states: ". . . structured interviews are particularly helpful for ascertaining a definitive diagnosis of ADHD" (p. 34). At the same time, however, they are cumbersome to use (Anastopoulos & Barkley, 1992) and are of limited value in designing school based interventions (Landau & Burcham, 1996). Also, when used alone they may result in false positives (Schaughency & Rothlind, 1991).[3] The advantage of unstructured formats are their flexibility, focus on the interviewee's concerns, and the wealth of psychosocial data that they provide. On the other hand, they are unreliable when it comes to making an ADHD diagnosis (Anastopoulos & Barkley, 1992; Hinshaw, 1994; Schaughency & Rothlind, 1991).

Parent interviews are an indispensable part of an ADHD evaluation (Barkley, 1990; Landau & Burcham, 1996; Parker, 1992). They are described by Whalen and Henker (1980) as ". . . a rich and often untapped source about atypical child development and family coping strategies" (p. 348). No adult is likely to have more information regarding a child's functioning than his or her parents. At the same time, however, it is acknowledged that the parent interview can be unreliable (Guevremont et al., 1990). Besides documenting ADHD symptoms, semi-structured parent interviews are reported to be helpful in assessing the child's developmental and school history (Barkley, 1990, 1991; Guevremont et al., 1990; Hinshaw, 1994). It is suggested that this history should include symptoms of ADHD from an early age, and a family history of ADHD (DuPaul, 1992; Guevremont et al., 1990; Pennington, 1991). Regarding this semi-structured interview procedure Hinshaw (1994) states: ". . . if there were to be only one assessment tool that could be used to evaluate the child who potentially has ADHD, a thorough developmental and family history might well be the choice"(pp. 35).

Of almost equal importance is the ***teacher interview***. In fact, Swanson (1992) recommends that in the case of conflicting opinions, special consideration should be given to teacher reports. Teachers are suggested to be an especially valuable resource given their knowledge of age appropriate behavior, and their access to observations of learning and social behavior (Wender, 1988). Besides documenting ADHD symptoms, the teacher interview is also helpful in identifying antecedents and consequences of problem behaviors (DuPaul, 1992), and in providing information regarding the child's academic functioning (Barkley, 1991; Guevremont et al., 1990). While it has been recommended that the ADHD diagnosis not be made without these reports (Liedel, 1987), they are reported to not be a well utilized resource (Parker, 1992). Also, it has been suggested that the diagnosis of ADHD in a clinic setting can be made without these reports. This suggestion comes from the observation that if a parent report is positive for ADHD, there is a 90% probability that the teacher report will also be positive (Biederman, Keenan, & Faraone, 1990).

Finally, a ***child interview*** has also been suggested to be useful in diagnosing ADHD. While this perspective will provide helpful information, self reports may not be valid in ascertaining ADHD symptoms (DuPaul & Stoner, 1994; Hinshaw, 1994; Landau & Burcham, 1996). Parent and teacher interview data are more valid and reliable than the child interview. The child interview may be espe-

cially important in determining the presence of other psychopathology such as depression and psychosis (Goldstein & Goldstein, 1990b; Wender, 1988). Also, behavior observed during the interview may be diagnostically significant. However, because the interview setting is likely to be novel, the absence of ADHD symptoms during the interview should not by itself be used to rule out ADHD (Guevremont et al., 1990).

Direct Observation

Typically conducted by either mental health or educational professionals, observations are designed to confirm reports (obtained by interview and rating scale) of ADHD symptoms (Parker, 1992), as well as to assess interpersonal and social skills (Hinshaw, 1994). Although acknowledged to be one of the most costly assessment procedures (Atkins & Pelham, 1991; Guevremont et al., 1990; Schaughency & Rothlind, 1991) most sources reviewed recommend using direct observation when diagnosing ADHD (see Table 2 for references). According to Anastopoulos and Barkley (1992), ". . . such procedures are often more reliable and valid than clinic-based laboratory assessment devices" (p. 422). They are able to define specific behaviors without the subjectivity of rating scales (Atkins & Pelham, 1991; Schaughency & Rothlind, 1991). Along with cost, weaknesses of observations include a lack of normative data, the possibility that some low frequency behaviors are missed by certain observational procedures, and that they require extensive training to employ (Guevremont et al., 1990; Schaughency & Rothlind, 1991).

If possible, several observations in different settings and situations are preferable given that ADHD symptoms vary considerably across situations and times (Landau & Burcham, 1996; Sattler, 1988). In general, however, it is recommended that the child be observed in the setting where the symptoms are most prominent. This is made necessary by the fact that ADHD symptoms are often not seen in the office setting (Copeland & Wolraich, 1987; Pennington, 1991; Silver & Brunsletter, 1986; Sleator &Ullmann, 1981). As a primary complication of ADHD is school failure (American Psychiatric Association, 1987), classroom observations are suggested to be especially important (Morriss, 1992). Regarding classroom observations Barkley (1990) concludes: "Such observations are likely to prove as useful as (or more useful than) any other sources of information in the evaluation, because they directly assess the actual ADHD symptoms of concern to the child's teacher" (p. 339). In-class observations correlate highly with teacher ratings of ADHD symptoms, as well as with measures of academic accuracy and productivity (DuPaul, 1990).

Recommended observation approaches include both anecdotal (Parker, 1992) and systematic (Barkley, 1990) strategies. Landau and Burcham (1996) report that no single observation system is considered appropriate for all cases. Instead the method chosen (e.g., interval time sampling, duration, event recording) should depend upon the types of concerns present.[4]

Laboratory and Psycho-Educational Tests

While some have argued that laboratory procedures ". . . should not be used to diagnoses ADHD" (Schaughency & Rothlind, 1991, p. 197), most sources reviewed advocate some use of structured norm referenced psycho-educational tests (see Table 2 for references). Typically administered by a mental health professional, these procedures attempt to directly assess the child's attentional capacity and explore other psycho-educational variables. While there may be some disagreement regarding the efficacy of laboratory measures, no source reviewed for this article argue against psycho-educational tests as an aid for identifying conditions or alternative explanations for ADHD symptoms.[5]

Reasoning offered to help explain why these procedures are not as widely endorsed as other diagnostic strategies include poor test standardization, the lack of procedures developed and normed specifically for ADHD diagnosis, the high rate of false positives and negatives, and the fact that there is no "pure" measure of attention (Barkley, 1990, 1991, 1994; Goldstein & Goldstein, 1990b). Also, Landau and Burcham (1996) question the ecological validity of laboratory procedures. Nevertheless, the past decade has seen a sig-

nificant progress in attempts to develop more objective means of assessing ADHD (Barkley, 1990).

Currently, the most useful laboratory measure is suggested to be continuous-performance tests (CPT) (Goldstein & Goldstein, 1990b). CPT are the most frequently studied and used laboratory measures of vigilance or attention and impulse control (Barkley, 1991; Guevremont et al., 1990). First developed by Rosvold, Mirsky, Sarason, Bransome, and Beck (1956), CPT typically require a child to listen to or look at a series of numbers or letters and to respond in some way (e.g., pressing a button) whenever a certain stimuli or pairs of stimuli are presented. Scores are typically based on the number of correct responses, errors of omission, and errors of comission. The Gordon Diagnostic System (Gordon, 1983) is an example of a recent CPT developed specifically for the purpose of ADHD diagnosis. While acknowledged as a helpful diagnostic aid, Swanson (1992) cautions that CPT should not be used as the sole source of ADHD diagnostic information.

Some authors suggest that intelligence testing may be useful in diagnosing this disorder. Specifically, Goldstein and Goldstein (1990a, 1990b) have suggested that the Mazes subtest from the *Wechsler Intelligence Scale for Children - Revised* (Wechsler, 1974) is sensitive to impulsivity. Similarly, Lufi and Cohen (1985) and Kirby and Grimly (1986) have offered that children with ADHD children score significantly lower on the Digit Span, Coding, and Arithmetic subtests than those without this disorder. However, conflicting evidence regarding the discriminative powers of this procedure is offered by Barkley (1990). He cites recent research that this Freedom from Distractibility factor is unable to distinguish children with ADHD from either learning-disabled or normal children.

As mentioned earlier, a commonly recognized purpose of psychometrics is in the evaluation of problems associated with ADHD. For example, assessment of cognitive and academic functioning is often recommended (Goldstein & Goldstein, 1990b; Hinshaw, 1994; Landau & Burcham, 1996; & Parker, 1992). Intelligence testing may help in the identification of conditions which commonly co-existing with ADHD, or conditions which may serve as a competing explanation for observed symptoms. For example, when combined with achievement and perceptual processing measures, the intelligence test will allow for the diagnosis of specific learning disabilities (Barkley, 1990; Lin-Dyken & Wolraich, 1991; Hunsucker, 1988). Additionally, intelligence test results serve to identify the developmental delays and intellectual giftedness that may cause inattention.

Observation of test taking behavior has also been reported to be helpful (Goldstein & Goldstein, 1990b). Recent research has shown that observations of children while being administered a continuous performance test (CPT) may be as sensitive to discriminating ADHD children from other diagnostic groups as are the CPT scores (Barkley, 1990). During testing ADHD children typically make more careless and impulsive errors (Goldstein & Goldstein, 1990a; Sattler, 1988). Additionally, they may find it difficult to sit still, display concentration difficulties over a sustained period of time, and may be distracted by events occurring outside the testing room. Test performance is often characterized by oversights, such as omissions or insertions or misinterpretation of easy items when well motivated (not just when completing tasks that hold little intrinsic value) (Sattler, 1988).

Medical Evaluation

Several authors suggest the medical evaluation to be an essential component of the ADHD diagnosis (see Table 2 for references). It typically includes a medical interview and physical examination. From this evaluation the need for diagnostic medical testing may be determined (Goldstein & Goldstein, 1990b). Although the medical evaluation is by itself inadequate to diagnosis ADHD, the physician has several diagnostic tasks to accomplish (Barkley, 1990). Perhaps most importantly the medical evaluation is needed to rule out the rare cases of ADHD symptoms due to a medical illness (Parker, 1992).

The first task is to identify medical conditions that may have caused ADHD symptoms. For example, in certain cases ADHD can arise secondary to a biologically compro-

Table 1
DSM IV Criteria for Attention-Deficit/Hyperactivity Disorder

A. Either (1) or (2):

(1) six (or more) of the following symptoms of inattention have persisted for at least 6 months to a degree that is maladaptive and inconsistent with developmental level:

Inattention

(a) often fails to give close attention to details or makes careless mistakes in schoolwork, work, or other activities

(b) often has difficulty sustaining attention to tasks or play activities

(c) often does not seem to listen when spoken to directly

(d) often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (not due to oppositional behavior or failure to understand instructions)

(e) often has difficulty organizing tasks and activities

(f) often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (such as schoolwork or homework)

(g) often loses things necessary for tasks or activities (e.g., toys, school assignments, pencils, books, or tools)

(h) is often easily distracted by extraneous stimuli

(i) is often forgetful in daily activities

(2) six (or more) of the following symptoms of hyperactivity-impulsivity have persisted for at least 6 months to a degree that is maladaptive and inconsistent with developmental level:

Hyperactivity

(a) often fidgets with hands or feet or squirms in seat

(b) often leaves seat in classroom or in other situations in which remaining seated is expected

(c) often runs about or climbs excessively in situations in which it is inappropriate (in adolescents or adults, may be limited to subjective feelings of restlessness)

(d) often has difficulty playing or engaging in leisure activities quietly

(e) is often "on the go" or often acts as if "driven by a motor"

(f) often talks excessively

Impulsivity

(g) often blurts out answers before questions have been completed

(h) often has difficulty awaiting turn

(i) often interrupts or intrudes on others (e.g., butts into conversations or games)

B. Some hyperactive-impulsive or inattentive symptoms that caused impairment were present before age 7 years.

C. Some impairment from the symptoms is present in two or more settings (e.g., at school[or work] and at home).

D. There must be clear evidence of clinically significant impairment in social, academic, or occupational functioning.

E. The symptoms do not occur exclusively during the course of a Pervasive Developmental Disorder, Schizophrenia, or other Psychotic Disorder and are not better accounted for by an other mental disorder (e.g., Mood Disorder, Anxiety Disorder, Dissociative Disorder, or a Personality Disorder).

Note. From the American Psychiatric Association (1994, pp. 83-85).

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Table 2
Diagnostic Techniques Recommended in Articles and Books on ADHD

Author(s)	RS	INT	DO	Test	MedEv	SchRec	PRate
Landau & Burcham (1996)[a,b]	4	4	4	4			
Nolten (1996)[c]	4	4	4			4	
Burcham & DeMers (1995)[a,c]	4	4	4	4			
Zeigler Dendy (1995)[c]	4	4	4	4	4	4	
DuPaul & Stoner (1994)[a]	4	4	4			4	
Hinshaw (1994)	4	4	4	4			4
Anastopoulos & Barkley (1992)[c]	4	4	4	4			
August, Ostrander, & Blommquist (1992)[d]	4	4					
DuPaul (1992)[a,c]	4	4	4			4	
Lin-Dyken & Wolraich (1992)	4	4		4	4		
Morriss (1992, March/April)[a]	4	4	4	4		4	
Parker (1992)[a]	4	4	4	4	4		
Silver (1992)[e]	4	4	4				
Swanson (1992)[a]	4	4	4	4	4		
Atkins & Pelham (1991)[a,b]	4		4			4	4
Barkley (1991)[c]	4	4	4	4			
Pennington (1991)	4	4	4	4			
Schaughency & Rothlind (1991)[f]	4	4	4	4			4
Barkley (1990)[c]	4	4	4	4	4		
Goldstein & Goldstein (1990b)	4	4	4	4	4	4	
Guevremont, DuPaul, & Barkley (1990)[c]	4	4	4	4			
Blondis, Accardo, & Snow (1989)[c]	4	4		4			
Wender (1988)[c]	4	4		4			
Kirby & Grimley (1986)	4	4		4			
Silver & Brunsletter (1986)[c]	4	4	4				

Note. RS = Rating scales, INT = Parent, teacher and child interviews, DO = Direct observation, Test = Laboratory and psycho-educational testing, MedEv = Medical evaluation, SchRec = School records, PRate = Peer ratings.
[a] Provides recommendations for school-based assessments of ADHD. [b] Describes procedures to define functional deficits important to treatment planning. [c] Provides recommendations for clinical assessments of ADHD. [d] Provides recommendations for epidemiological screening of ADHD. [e] Also recommend assessing desk organization and quantity of written work. [f] Do not recommend laboratory assessment of attention skills, but suggest that psycho-educational testing may be necessary to rule out alternative explanations for ADHD symptoms.

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mising event. These events may include severe Reye's syndrome, hypoxic-trauma (e.g., near-drowning or severe smoke inhalation), head trauma, central nervous system infection, or cerebral-vascular disease (Barkley, 1990). Fetal postmaturity, long labor, maternal toxemia and frequent ear infections have also been associated with ADHD (Goldstein & Goldstein, 1990b).

The second task is to identify medical conditions associated with ADHD symptoms that may require treatment in their own right. When suspected to be present these conditions may require additional medical diagnostic tests. These conditions include vision and hearing problems, hyper- or hypothyroidism, lead poisoning, iron-deficiency anemia, pinworms, sleep apnea, or other chronic illnesses (Barkley, 1990; Goldstein & Goldstein, 1990b; Lin-Dyken & Wolraich, 1992). A seizure disorder is an example of a problem that may cause ADHD-like symptoms. The staring spells often seen in petit mal epilepsy can be confused with ADHD. The child referred for ADHD who presents with staring spells as a major symptom is an example of a circumstance where diagnostic testing (i.e., an EEG) is critical. Typically, however, the medical interview and physical examination are able to exclude conditions such as those mentioned above, and extensive medical diagnostic testing is rarely needed to diagnosis ADHD (Goldstein & Goldstein, 1990b).

It is suggested that the medical examination is especially critical for children with histories of a seizure disorder and/or asthma. As many as 30% of children with a seizure disorder may develop ADHD or have its symptoms worsened with anticonvulsants such as Dilantin or Phenobarbital (Wolf & Forsythe, 1978). Similarly the medication Theophylline, used to treat asthma, is reported to affect attention span and may exacerbate a preexisting case of ADHD (Barkley, 1990; Parker, 1992).

The final suggested purpose of the medical exam is to determine if there are physical conditions that would contraindicate treatment with stimulant medications. For example, in the case of a child with a personal or family history of a tic disorder or Tourette's syndrome use of stimulant medication should be carefully considered. This is important given the possibility stimulants may exacerbate this disorder's symptoms. Additionally, a history of high blood pressure or heart problems means that stimulant medication should be carefully considered as these medications are known to have an effect on the cardiovascular system (Barkley, 1990; Goldstein & Goldstein, 1990b; Parker, 1992).

Peer Assessments

Peer nominations and Peer ratings are another set of procedures suggested to be useful in the diagnosis of ADHD (see Table 2 for references). The utility of these procedures is based upon the well-documented social difficulties experience by ADHD children (Whalen & Henker, 1985) and that the severity of these difficulties are an indicator of eventual adolescent and adult outcome (Hinshaw, 1994; Weiss & Hechtman, 1986). Peer nominations typically require children to nominate those classmates whom the like the most, and those whom the like the least. Atkins and Pelham (1991) report that ADHD children are usually rated a less popular and more disliked then children without this disorder. Peer ratings, on the other hand, obtain from classmates information regarding specific behaviors that lead to rejections, neglect, and popularity. Regarding these procedures, Schaughency and Rothlind (1991) suggest that ". . . peers are able to identify attention problems among their classmates who are referred for adjustment difficulties and to differentiate among their classmates who are referred for adjustment difficulties and to differential among the externalizing behavior problems of their classmates" (p. 196).

Review of School Records

Examination of school record needs has also been suggested to be helpful (see Table 2 for references). Typically, ADHD children will have evidenced difficulties with on-task behavior throughout their school careers. In fact, as was previously mentioned, DSM IV criteria require symptoms manifest themselves before age seven (American Psychiatric Association, 1994). Review of school records, such

Table 3
Summary of Recommended ADHD Diagnostic Procedures

Procedure	Diagnostician	Diagnostic Techniques	Possible Diagnostic Questions
Rating scales	Mental Health Professional	Conners' (1969) Teacher Rating Scale.	Are ADHD symptoms present? How deviant are symptoms from the norm?
	Medical Professional	Child Behavior Check List (Achenbach & Edelbrock, 1983).	In what settings are ADHD symptoms most problematic? Are there alternative or comorbid conditions?
Parent, Teacher, and Child Interviews	Mental Health Professional Medical Professional	Structured Interview Techniques [e.g., **Diagnostic Interview Schedule for Children** (Costello, Edelbrock, Kalas, Kessler, & Klaric, 1982)] Unstructured Interview Techniques Semi-structured Interviews (i.e., developmental and health histories)	Are ADHD symptoms present? When was the onset of ADHD symptoms? How long have symptoms been present? Is the environment a factor? Is there a family history of ADHD? Is the developmental/medical history suggestive of ADHD? Are there learning difficulties? Are there interpersonal difficulties?
Direct Observations	Mental Health Professional Educational Specialist	Observation of test taking behavior Classroom Observation Code (Abikoff, Gittleman-Klein & Klein, 1977) Restricted Academic Situation (Barkley, 1990)	Does the child display ADHD symptoms Does the child display interpersonal and/or social skill deficits?
Laboratory and Psycho-educational Testing	Mental Health Professional	Continuous Performance Tests (e.g., Gordon, 1983) Intelligence Testing (e.g. Wechsler, 1991)	Achievement Testing Perceptual Processing Measures Does the child perform poorly on attention measures? What is the child's ability level? Are there learning disabilities? Are there alternative or comorbid conditions?
Medical Evaluation	Pediatrician General Practitioner Psychiatrist	Medical Interview Physical Examination Other medical tests as indicated (e.g., EEG)	Are symptoms secondary to a medical condition? Are symptoms secondary to a treatable medical condition? Are symptoms related to treatments for other medical conditions? Is medication contraindicated?
School Records	Mental Health Professional Educational Specialist	Cumulative file review School work sample review	Is there a history of ADHD symptoms? When was the onset of ADHD symptoms? How severe are the ADHD symptoms?
Peer Ratings	Mental Health Professional Educational Specialist	Peer Nominations Peer Ratings [e.g., Pupil Evaluation Inventory (Pekarick, Prinz, Liebert, Weintraub & Neale, 1976)]. Lowest play rating (Asher & Dodge, 1986).	Is the child accepted or rejected by peers?

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as report cards, will yield information regarding when symptoms were first seen. These records also provide data on the types of symptoms observed and their severity over time (Goldstein & Goldstein, 1990b). Specifically, they provide data on a child's work habits, task completion skills, and restlessness (DuPaul, 1992).

Conclusion

In concluding this review, the observation that the diagnosis of ADHD is a matter of an educated opinion needs to be emphasized. There is no single psychological or medical test recommended for use in diagnosing ADHD. Further compounding this problem is the fact that there are a number of other factors or conditions that may either serve as alternative explanations for ADHD symptoms, or may coexist with this disorder. Due to these diagnostic hurdles, a multidisciplinary team of qualified professionals (i.e., medical, psychological, and educational), making use of multiple information sources (which must include the parent and should include the classroom teacher), and multiple diagnostic procedures (i.e., rating scales, interviews, observations, psychometric testing, medical evaluations, peer ratings and record review), are essential to proper diagnosis.

References

Abikoff, H., Gittelman-Klein, R., & Klein, D. (1977). Validation of a classroom observation code for hyperactive children. *Journal of Consulting and Clinical Psychology, 45,* 772-783.

Achenbach, T. M., & Edelbrock, C. (1983). *Manual for the Child Behavior Checklist and Revised Child Behavior Profile.* Burlington, Vermont: University of Vermont, Department of Psychiatry.

American Psychiatric Association. (1987). *Diagnostic and statistical manual of mental disorders* (Third edition - Revised). Washington, DC: Author.

American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (Fourth edition). Washington, DC: Author.

Anastopoulos, A. D., & Barkley, R. A. (1992). Attention deficit-hyperactivity disorder. In C. E. Walker & M. C. Roberts (Eds.), *Handbook of clinical child psychology* (pp. 413-430). New York: Wiley.

Asher, S. R., & Dodge, K. A. (1986). Identifying children who are rejected by their peers. *Developmental Psychology, 22,* 444-449.

Atkins, M. S., & Pelham, W. E. (1991). School-based assessment of attention deficit-hyperactivity disorder. *Journal of Learning Disabilities, 24,* 197-203.

August, G. J., Ostrander, R., & Bloomquist, M. J. (1992). Attention deficit hyperactivity disorder: An epidemiological Screening Method. *American Journal of Orthopsychiatry, 62,* 387-396.

Barkley, R. A. (1981). *Hyperactive children: A handbook for diagnosis and treatment.* New York: Guilford.

Barkley, R. A. (1990). *Attention deficit hyperactivity disorder: A handbook for diagnosis and treatment.* New York: Guilford.

Barkley, R. A. (1991). Diagnosis and assessment of attention deficit-hyperactivity disorder. *Comprehensive Mental Health Care, 1,* 27-43.

Barkley, R. A. (1994). Are tests of frontal lobe functions useful in the diagnosis of attention deficit disorders? *The Clinical Neuropsychologist, 8,* 121-139.

Biederman, J., Keenan, K., & Faraone, S. V. (1990). Parent-based diagnosis of Attention Deficit Disorder predicts a diagnosis based on teacher reports. *Journal of the American Academy of Child and Adolescent Psychiatry, 29,* 698-701.

Blondis, T. A., Acardo, P. J., & Snow, J. H. (1989). Measures of attention deficit: II. Clinical perspectives and test interpretation. *Clinical Pediatrics, 28,* 268-276.

Burcham, B. G., & DeMers, S. T. (1995). Comprehensive assessment of children and youth with ADHD. *Intervention in School and Clinic, 30,* 211-220.

Conners, C. K. (1969). A teacher rating scale for use with drug studies with children. *American Journal of Psychiatry, 126,* 885-888,

Copeland, L., & Wolraich, M. (1987). Attention-deficit hyperactivity disorder. In M. Wolraich (Ed.), *The practical assessment and management of children with disorders of development and learning.* Chicago: Year Book Medical Publishers.

Costello, A., Edelbrock, C., Kalas, R., Kessler, M., & Klaric, S. (1982). *The NIMH Diagnostic Interview Schedule for Children (DISC).* Pittsburgh, Author.

DuPaul, G. J. (1990). Parent and teacher ratings of ADHD symptoms: Psychometric properties in a community-based sample. In R. A. Barkley, *Attention deficit hyperactivity disorder: A handbook for diagnosis and treatment* (pp. 310-314). New York: Guilford.

DuPaul, G. J. (1992). How to assess attention-deficit hyperactivity disorder within school settings. *School Psychology Quarterly, 7,* 60-74.

DuPaul, G. J., & Stoner, G. (1994). *ADHD in the schools: Assessment and intervention strategies.* New York: Guilford.

Goldstein, S., & Goldstein, M. (1990a). *The multi-disciplinary evaluation and treatment of children with attention deficit disorders* (fifteenth edition). Salt Lake City, UT: The Neurology, Learning and Behavior Center.

Goldstein, S., & Goldstein, M. (1990b). *Managing attention disorders in children: A guide for practitioners.* New York, Wiley.

BEST COPY AVAILABLE

Gordon, M. (1983). *The Gordon Diagnostic System.* Boulder, CO: DeWitt, New York: Gordon Systems.

Guevremont, D. C., DuPaul, G. J., Barkley, R. A. (1990). Diagnosis and assessment of attention deficit-hyperactivity disorder in children. *Journal of School Psychology, 28,* 51-78.

Hinshaw, S. P. (1994). *Attention deficits and hyperactivity in children.* Thousand Oaks, CA: Sage.

Hunsucker, G. (1988). *Attention deficit disorder.* Abilene, TX: Forest Publication.

Kirby, E. A., & Grimley, L. K. (1986). *Understanding and treating attention deficit disorder.* New York: Pergamon Press.

Landau, S., & Burcham, B. G. (1996). Best practices in the assessment of children with attention disorders [CD-ROM]. In *Best practices school psychology III.* Bethesda, MD: National Association of School Psychologists.

Liedel. J. (1987). Updated developments on attention deficit disorder. *Communiqué, 16,* 1.

Lin-Dyken, D., & Wolraich, M. L. (1992). Attention deficit hyperactivity disorder. In D. E. Greydanus & M. L. Wolraich (Eds.), *Behavioral pediatrics* (pp. 167-193). New York: Springer.

Lufi, D., & Cohen, A. (1985). Using the WISC-R to identify attention deficit disorders. *Psychology in the Schools, 22,* 40-42.

Morriss, R. (1992, March/April). Be alert to the use and abuse of rating scales when assessing attention disorders. *CASP Today,* pp. 14-16.

Nolten, P. W. (1996). Assessment of attention deficit hyperactivity disorder. *The School Psychologist, 50*(2), 1, 42-43.

Parker, H. C. (1992). *The ADD hyperactivity handbook for schools.* Plantation, FL: Impact Publications.

Pekairk, E. G., Prinz, R. J., Liebert, D. E., Weintraub, S., & Neale, J. M. (1976). The Pupil Evaluation Inventory: A sociometric technique for assessing children's social behavior. *Journal of Abnormal Child Psychology, 4,* 83-97.

Pennington, B. F. (1991). *Diagnosing learning disorders: A neuropsychological framework.* New York: Guilford.

Rosvold, H. E., Mirsky, A. F., Sarason, I., Bransome, E. D., & Beck, L. H. (1956). A continuous performance test of brain damage. *Journal of Consulting Psychology, 20,* 343-350.

Sattler, J. (1988). *Assessment of children* (3rd Ed.). San Diego, CA: Author.

Schaughency, E. A., & Rothlind, J. (1991). Assessment and classification of attention deficit hyperactive disorders. *School Psychology Review, 20,* 187-202.

Silver, L. B. (1992). *Attention-deficit Hyperactivity Disorder: A clinical guide to diagnosis and treatment.* Washington, DC: American Psychiatric Association.

Silver, L. B., & Brunsletter, R. W. (1986). Attention deficit disorder in adolescents. *Hospital and Community Psychiatry, 37,* 608-612.

Sleator, E. K., & Ullmann, R. K. (1981). Can the physician diagnose hyperactivity in the office? *Pediatrics, 67,* 13-17.

Swanson, J. M. (1992). *School-based assessments and interventions for ADD students.* Irvine, CA: K. C. Publishing.

Wechsler, D. (1974). *Manual for the Wechsler Intelligence Scale for Children-Revised.* San Antonio, TX: The Psychological Corporation.

Wechsler, D. (1991). *Manual for the Wechsler Intelligence Scale for Children-Third Edition.* San Antonio, TX: The Psychological Corporation.

Weiss, G., & Hechtman, L. T. (1986). *Hyperactive children grown up.* New York: Guilford.

Wender, P. H. (1988). Attention deficit hyperactivity disorder. In J. G. Howells (Ed.), *Modern perspectives in clinical psychiatry* (pp. 149-169). New York: Brunner/Mazel Inc.

Whalen, C. K., & Henker, B. (1980). *Hyperactive children: The social ecology of identification and treatment.* New York: Academic Press.

Whalen, C. K., & Henker, B. (1985). The social worlds of hyperactive (ADDH) children. *Clinical Psychology Review, 5,* 447-478.

Wolf, S. M., & Forsythe, A. (1978). Behavior disturbance, Phenobarbital, and febrile seizures. *Pediatrics, 61,* 728-731.

Zeigler Dendy, C. A. (1995). *Teenages with ADD: A parents' guide.* Bethesda, MD: Woodbine House.

Footnotes

[1] The use of these fixed cut-off scores, generates a diagnostic issue that needs to be mentioned. It has been argued that a fixed score fails to take into account developmental differences. As younger children are frequently viewed as having short attention spans and as being hyperactive, use of the single criterion scores for all age groups may tend to over identify young children. Conversely, it may be too exclusive when applied to older age groups (Barkley, 1990).

[2] For a more complete review of specific rating scales the reader is encouraged to refer to Barkley (1990) and Goldstein and Goldstein (1990b).

[3] The reader is encouraged to refer to Barkley (1990) for a review of structured procedures.

[4] The reader is encouraged to refer to Parker (1992) and Barkley's (1990) discussions of direction observation for more information of specific techniques.

[5] The reader is encouraged to refer to Barkley (1990) and Goldstein and Goldstein (1990b) for additional discussion of clinical measures of attention.

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NATURALISTIC TEACHING STRATEGIES (NATS) TO TEACH SPEECH TO CHILDREN WITH AUTISM: HISTORICAL PERSPECTIVE, DEVELOPMENT, AND CURRENT PRACTICE

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Abstract: The present manuscript reviews four promising procedures for teaching speech to children with autism: Natural Language Paradigm, Speech/Play Enhancement for Autistic Kids, Multiple Incidental Teaching Sessions, and Time Delay. These training procedures are called Naturalistic Teaching Strategies (NaTS) because they incorporate components and strategies known to facilitate acquisition, generalization, and maintenance of new behaviors. These components include motivation, functional relationships, and facilitators of generalization and are briefly defined and discussed in relation to the four teaching procedures. All of the procedures and findings are data-based and can be used in a variety of settings such as classroom, playground, home, and community settings. The manuscript begins with a historical perspective of behavioral speech/language training and the need for NaTS and concludes with a discussion of the merits of NaTS and their importance in the treatment of children with autism.

A hallmark feature of children with autism is their severe and pervasive speech and language deficits (Pauls, 1987; Rimland, 1964; Schreibman, 1988). Approximately 50% of children with autism are nonverbal, and those children who do acquire some speech before language intervention usually exhibit speech that is echolalic (Charlop & Haymes, 1994). That is, the children merely repeat what they have heard with little or no comprehension. There are two types of echolalia, immediate and delayed. Immediate echolalia is repetition of what was just spoken. For example, if the teacher says, "How are you, Bobby? " the child is likely to respond with "How are you, Bobby?" as opposed to an answer such as "I'm fine." Delayed echolia involves repetition of a past utterance such as a past conversation or line from a video or TV commercial (e.g., "Good night, Mommy", "Sesame Street has been brought to you by..."). Recently, there has been evidence that some echolalia has communicative intent (e.g., Charlop, 1983; Charlop & Milstein, 1989; Charlop & Trasowech, 1991; Prizant, 1982, 1983).

Children with autism have many other speech disfluencies including pronoun reversals (e.g., substitute "you" for "I"), dysprosody (incorrect/off intonation, inflection, rhythm, etc.), extreme literalness, neologisms, and/or idiosyncratic word use. Those individuals with less severe autism or mental retardation or those diagnosed with Asperger's Syndrome have relatively more sophisticated language skills, but typically have problems with the subtle aspects of communication. These children may have difficulties integrating affective cues and the literal content of the speech (Volkmar & Cohen, 1994), may perseverate on topics, be unresponsive to cues of the listener, or have difficulties integrating the social flow of conversation. As such, they may be considered "eccentric" or "odd" in their conversational speech (Charlop & Milstein, 1989; Schreibman, 1988). Thus, the vast majority of children with autism either do not speak, speak words or jargon without communication (echolalia), or lack more naturalized and social aspects of speech such as conversational speech or spontaneous speech. Behavioral interventions have been developed to address many of these unusual speech difficulties and to assist children with autism in developing speech. In an attempt to provide a historical background, two of the first language intervention procedures (discrete trial procedures and incidental teaching procedures) are reviewed. This review is followed by a detailed discussion of the naturalistic teaching strategies that grew out of the early procedures.

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Discrete Trial Procedures

Despite devastating deficits in speech and language, behavioral treatment procedures have been effective in increasing speech for both nonverbal and echolalic children with autism. In early research suggesting that children with autism can learn acquire speech, Lovaas (1977) demonstrated that clinic based programs can promote the acquisition of speech in children with autism by utilizing a discrete trial procedure. This method usually involves the creation of a work area to remove environmental distractions from the training session. Sessions are usually pre-arranged with a therapist sitting face to face with the child in the arranged work area and directing the child's attention to a task. Thus, tight stimulus control is in effect because the child's behavior is clearly and completely controlled by discriminative stimuli or cues in the treatment environment. Trials are massed, usually 10 trials of one task in a row, in an attempt to promote rapid speech acquisition. The child's speech is prompted and shaped using therapist-chosen reinforcers that may be artificial to the setting, but generally get the child's attention. For example, a child will receive an M & M for imitating a therapist's verbalization of a vowel sound (Lovaas, 1977; Lovaas & Taubman, 1981).

Despite the success of discrete trial procedures in promoting speech acquisition, several problems have been noted in the use of discrete trial procedures to promote long-term speech gains. The most prominent difficulty is the lack of generalization of treatment gains to more natural environments (Spradlin & Siegel, 1982). Generalization refers to the transfer of newly acquired behaviors to other persons, other settings, and to other related behaviors (Schreibman, 1988). Lovaas, Koegel, Simmons, and Stevens-Long (1973) reported that if a child is removed from an environment with functional contingencies (e.g., the structured work setting), his/her newly learned behaviors do not occur. Lovaas (1977) also reported that the highly structured setting does not provide the child with enough variability to promote the generalization of learned behaviors to other, more natural settings. These findings have led other researchers to suggest that specialized training procedures must be naturalized, and perhaps incorporated into the child's daily routine in order to increase generalization of learned tasks (Hart & Risley, 1975; Kaiser, Ostrosky, & Alpert, 1993; McGee, Krantz, & McClannahan, 1985; Spradlin & Siegel, 1982).

Another problem associated with the discrete trial method is that artificial reinforcers are used to teach speech, rather than the incorporation of the natural consequences associated with language. For example, when using discrete trial procedures, a child verbalizing "It is ball" typically receives food as a reinforcer rather than the natural reinforcer of the ball. This method may initially promote acquisition of speech and language, but does not promote generalization of the newly acquired skills because the reinforcers (food) and the reinforcement schedule (continuous) are not available in the natural environment. Thus, speech and language learned under conditions of frequent artificial reinforcement will probably become extinguished before it can come under control of the natural consequences of the environment (Spradlin & Siegel, 1982).

Skinner (1957) discussed in his seminal book, *Verbal Behavior*, the natural order of language development which has implications for teaching speech and language to children with autism. He proposed that mands, which are verbalizations that act upon the environment by specifying their reinforcer (e.g., "I want juice") occur in language development before tacts, which are descriptive statements about the environment that do not automatically generate functional relationships ("it is blue"). Thus, discrete trial procedures focusing on tact training first are not designed in accordance with behavioral theories of language development (Skinner, 1957). In addition, these procedures do not incorporate our understanding of behavioral acquisition principles such as the effects of establishing operations in maximizing the learner's motivation (Michael, 1993) and establishment of functional relations between language and the environment.

As a final drawback, discrete trial teaching procedures may be difficult and time consuming to incorporate into a child's daily routine because this method requires a structured one-to-one adult-child interaction. For example, Harris, Wolchik, and Weitz (1981) demonstrated that parents of children with autism were unable to consistently use one-to-one discrete trial sessions on a daily basis. Discrete trial procedures may also be is difficult to implement in the classroom environment, which is not typically one-on-one, individual work either (Rogers-Warren & Warren, 1980). As research has revealed these limitations to the long-term success of discrete trial procedures, alternative training methods have emerged to address those drawbacks.

Incidental Teaching Procedures

The first alternative method to be developed, incidental teaching, focuses on teaching children with autism in the natural environment. In their seminal article, Hart and Risley (1968) used incidental teaching to promote language usage in disadvantaged preschoolers. During this procedure, children initiated an interaction with an adult (teacher) in order to receive a child-selected reinforcer that only an adult could provide. The behaviors generalized as did other language beyond the targeted behaviors. In a similar study using incidental teaching, McGee, Krantz, Mason, and McClannahan (1983) taught receptive labeling skills of lunch items to two children with autism in a natural setting (i.e., school kitchen) where school lunches were prepared. Similarly, Farmer-Dougan (1994) increased appropriate requesting in adults with severe mental retardation or autism during lunch preparation by using a peer-delivered incidental teaching method. Finally, the efficacy of incidental teaching was demonstrated again for increasing preposition use (McGee et al., 1985). Importantly, the results of these studies all showed that generalization of treatment gains were easily attained.

Incidental teaching clearly leads to better generalization of newly acquired material than discrete trial procedures, but the learning rate tends to be slower than discrete trial because of the limited number of trials (Rogers-Warren & Warren, 1980). In order to address the drawback of limited trials, other variations of the incidental teaching method have been developed. These variations create the opportunity for increased trials through the use of both adult-initiated interactions (Rogers-Warren mand-model procedure) as well as child-initiated interactions (Hart & Risley IT procedure). Rogers-Warren and Warren (1980) have used a variation of incidental teaching to promote language in language-delayed preschool children. With their mand-model approach, teachers initiated interactions by providing mands (non-yes/no questions) and models (imitative prompts) during the child's daily routine.

The mand-model approach differs from traditional incidental teaching primarily in the manner in which the interactions occur. In this procedure, the number of interactions are controlled by the teacher to create additional learning trials for more rapid skill acquisition, but the reinforcers are still child-selected to promote a functional relation between speech and the environment and to maximize the child's motivation to speak. Thus, if a child has a toy in his hand, the teacher would initiate an interaction about the toy and may create several training trials that incorporate the child's current preference for the toy. The mand-model approach has had many of the same positive effects as incidental teaching even though it incorporates adult-initiated interactions (Rogers-Warren & Warren, 1980; Warren, McQuarter, & Rogers-Warren, 1984).

Perhaps due to the relationship between early intervention and improved treatment outcome, there has recently been a resurgence in utilizing faster, more intensive procedures such as the discrete trial method rather than incidental teaching to promote language in children with autism (Lovaas, 1987). Lovaas (1993) found that an intensive behavioral treatment for at least two years involving 40 hours per week of one-on-one sessions for children with autism age 4 years or younger led to lasting social and intellectual gains when the children were assessed at age 7 and 13. However, Lovaas (1993) also noted that similar programs involving intensive behavioral treatments were difficult to set up due to inadequate fi-

nancial support and inadequate client referrals. Thus, the current state of the art for teaching speech to children with autism provides discrete trial programs with rapid acquisition but problems with generalization of treatment effects or incidental teaching procedures which fare better with generalization but take longer due to fewer learning opportunities on a daily basis. This is not to say that discrete trial procedures and incidental teaching procedures are inadequate. Indeed, the literature discussed above presents their efficacy and data based achievements and clearly illustrates their importance as initial steps in developing effective language interventions for children with autism. Rather, we are suggesting that the onus is upon us to continue to improve our treatment services for students with autism. Below is our attempt to provide new teaching procedures which have been guided by previous research efforts and behavioral theories and advancing technologies to facilitate the difficult task of teaching speech and language to children with autism.

Naturalistic Teaching Strategies

Naturalistic teaching strategies emerged out of the need to facilitate speech acquisition and promote generalization in natural environments such as in the home, school, and community (Halle, 1984; Halle, Baer, & Spradlin, 1981). In general, naturalistic teaching strategies incorporate three vital elements: 1) *motivation* enhancing techniques, 2) *functional relationships*, and 3) variables that facilitate *generalization*. The motivation enhancing techniques include strategies such as varied reinforcers, child choice, and repeated preference assessments with preferred stimuli and novel stimuli to indicate which items are currently of interest (DeLeon & Iwata, 1996; Egel, 1981). In addition, motivation is enhanced by incorporating therapy environments which are less structured and associated with play. Second, functional relationships are established between spoken words and access to reinforcing events, thus maximizing the motivational effects of existing establishing operations, and establishing mands as a response class (Michael, 1993). Finally, naturalistic teaching strategies include variables that facilitate generalization, such as less structured teaching settings (free play), incorporation of natural environments (home) as teaching environments, the use of parents, teachers, and others who co-occupy the natural environment, and use of natural reinforcers and intermittent contingencies (c.f. Stokes & Baer, 1977).

Naturalistic teaching strategies are a departure from early discrete trial speech training approaches (e.g., Lovaas, 1981) in several aspects. First, naturalistic teaching strategies focus on natural speech production rather than on rote memorization of speech phrases and drills of facts and responses. Second, naturalistic teaching strategies provide a more motivating, enjoyable work environment for children, and focus on speech behaviors which are more likely to generalize (Charlop-Christy & Schreibman, 1998). Data indicate that naturalistic teaching strategies are associated with rapid behavior gains (e.g., Charlop, Schreibman, & Thibodeau, 1985), generalized treatment effects (Schreibman & Koegel, 1996), and positive attitudes on behalf of behavior change agents (Schreibman, Kaneko, & Koegel, 1991).

Below is a brief discussion of the previous literature on the three components of naturalistic teaching strategies: motivation, functional relationships, and generalization and maintenance. Also included in this portion of the manuscript is a presentation of several naturalistic teaching strategies researched at the Claremont Autism Center. As reviewed earlier, there are many other naturalistic teaching strategies such as incidental teaching (e.g., Hart & Risley, 1975; McGee, et al., 1985), milieu therapy (Rogers-Warren & Warren, 1980), and pivotal response training (Koegel, Schreibman, Good, Cerniglia, Murphy, & Koegel, 1989), that have influenced the development of our procedures or that were researched concurrently. However, we will highlight those used at the Claremont Autism Center over the past 15 years. Interested readers may also want to see a related chapter in *Autism: Behavior Analytic Perspectives* (Charlop-Christy & LeBlanc, in press).

Motivation

Children with autism may not be motivated by the same social reinforcers that motivate typical children (e.g., achievement, praise, success). Frequently, the teaching setting is associated with a lack of reinforcers, unpleasant stimuli such as difficult tasks, and boring repetitious drills (Charlop-Christy & Schreibman, 1998). Children with autism will frequently try to escape aversive work settings by engaging in inappropriate behaviors such as tantrums and self-injurious behavior (Carr, 1977). Thus, increasing motivation to work on difficult tasks is crucial to the child's continued improvement and to overall treatment success. The importance of motivation is clearly reflected in the number of published studies which have addressed strategies to increase motivation to learn for children with autism.

One line of research has focused on interspersing trials of previously learned, "maintenance", tasks with trials of new, "acquisition" tasks. Dunlap and Koegel (1980) demonstrated that trial interspersal was associated with increased attempts to respond and fewer avoidance and escape behaviors which may be indicators of superior motivation. Charlop, Kurtz, and Milstein (1993) expanded upon this evidence by noting that the presentation of maintenance tasks is important, but the schedule of reinforcement for both maintenance tasks and acquisition tasks is perhaps more important. Since few correct responses are typically made during initial learning of a task, procedures that include the interspersal of maintenance tasks ensure that the child maintains a relatively high density of reinforcement even when the child is not successful with the new task.

Another research approach to this motivation problem is the identification of new reinforcers. In one study, Charlop, Kurtz, and Casey (1990) assessed the effectiveness of using aberrant behaviors as reinforcers for children with autism to increase appropriate responding. In a series of three experiments, reinforcer conditions of self-stimulation, delayed echolalia, and obsessive behaviors were compared with more standard food reinforcers and varied (food/aberrant behavior) reinforcer conditions. For example, during sessions of the delayed echolalia condition each child was permitted to utter a favored delayed echo (e.g., say "Eat your beef stew"). During sessions with self-stimulation as a reinforcer the child was allowed to engage in 5 seconds of an idiosyncratic stereotypy (e.g., flap his hand for 5 seconds). Finally, in sessions that employed objects of obsession as a reinforcer the child could have brief access to an object with which he/she was preoccupied (e.g., look at a map for 5 seconds).

The results of these three experiments suggested that these aberrant behaviors could be easily controlled and used effectively as reinforcers for new behaviors, without increasing the level of free operant responses of aberrant behaviors. Using aberrant behaviors as reinforcers has also proven effective in reducing inappropriate behaviors by allowing access to the item of obsession contingent upon periods of nonoccurrence of inappropriate behaviors in a differential reinforcement of other behavior (DRO) paradigm (Charlop-Christy & Haymes, 1996). Finally, a comparison of token economies using tokens with no previously assessed value and tokens deemed objects of obsession has suggested that token reinforcers are more effective if they are items of obsession (Charlop-Christy & Haymes, 1998).

Functional Relationships

The use of functional relationships between speech and its outcome (reinforcer) has been examined in the earlier literature on incidental teaching and milieu therapy with children with autism (McGee et al., 1985; Rogers-Warren & Warren, 1980). The naturalistic teaching strategies discussed later in this paper will elaborate upon the necessity of the functional relationship between a verbal utterance and a related reinforcer, as opposed to the relationship between a verbal utterance and an arbitrary or unrelated event such as food. It is important to note that while food reinforcers are often functionally related to the verbal behavior (e.g., "I want chips") (Charlop et al., 1985), food may not be functionally related when a child requests a toy

(e.g., "train") or when the child imitates a verbal model.

Other studies have confirmed the importance of a functional relationship between a verbal behavior and the subsequent reinforcing event. For example, Koegel, O'Dell, and Koegel (1987) demonstrated that appropriate social behaviors may be increased by allowing the child to choose the task or activity and to choose the potential reinforcer. This emphasis on choice facilitates functional relationships by maximizing the potential effects of establishing operations as motivation for mands (Michael, 1982). Additionally, shaping or the reinforcement of successive approximations to correct responses allows the reinforcer to be presented much earlier in the acquisition process and on a more dense schedule (Laski, Charlop, & Schreibman, 1988). Thus, the connection between behavior and natural reinforcer is more likely due to a greater number of successful trials (Koegel, O'Dell, & Dunlap, 1988).

Carr, Binkoff, Kologinsky, and Eddy (1978) taught children with autism to use sign language to request items that were likely found in the natural environment. The children were taught to spontaneously request (via signing) their favorite toys as opposed to specific educational stimuli found only in the training environment. This training led to generalized spontaneous signing. One can see the importance of the functional relationship component of naturalistic teaching strategies in terms of acquisition of speech behaviors and in relation to motivation (discussed above) and generalization (discussed below).

Generalization and Maintenance

The acquisition of speech or any other behavior is meaningless unless generalization and maintenance occur over time. Thus, naturalistic teaching strategies incorporate many of the provisions for facilitating generalization and maintenance that were outlined in the seminal article by Stokes and Baer (1977). One approach to facilitating generalization is to increase the similarity between the treatment environment and the natural environment. This similarity can be promoted in several ways. First, the use of intermittent reinforcement schedules during treatment provides a learning environment that more closely approximates the contingencies in effect in the natural environment. Several studies have suggested that the use of intermittent schedules increases the durability of treatment gains by reducing the discriminability of the reinforcement schedules used in the treatment and non-treatment settings (Charlop et al., 1993; Koegel & Rincover, 1977). As will be described later, naturalistic teaching strategies also incorporate play settings which facilitate the transition to and similarity with the natural environment (Charlop-Christy & Carpenter, 1997; Laski et al., 1988; Valdez, 1998).

Naturalistic teaching strategies also incorporate procedures that provide direct skill training in the settings in which generalization needs to occur, referred to by Stokes and Baer (1977) as sequential modification. However, the impracticality of training a behavior in every potential situation frequently necessitates use of an alternative approach - training multiple exemplars (Stokes & Baer, 1977). This technique may also be difficult because it is usually impossible to determine beforehand the necessary number of situations or exemplars that will be required before generalization is achieved. However, much success with this approach has been reported in the literature (e.g., Laski et al., 1988).

Stokes and Baer (1977) also suggested using a facilitator of generalization known as mediated generalization. This procedure focuses on teaching a target response that is likely to occur in both treatment and nontreatment situations. The most common mediator is language. Children giving self-instructions in different environments are using this generalization strategy. Few studies have addressed the use of mediated generalization with children with autism. Charlop (1983) demonstrated that children with autism might be able to use their echolalia as a verbal mediator. Self-management procedures may also be considered mediated generalization because the target behavior (self-management) can be taken along from the training environment to other settings (e.g., Koegel & Koegel, 1986; Pierce & Schreibman, 1995; Stahmer, 1995). It is clear that research into

achieving generalization of treatment effects has become a top priority for naturalistic teaching strategies.

Naturalistic Teaching Strategies for Speech Acquisition, Generalization, and Maintenance

As stressed earlier, the strategies presented in this section are an example of some of the techniques being researched at the Claremont Autism Center. These strategies are a few of the ones that we use, in conjunction with many other procedures in our treatment of children with autism. Also, many other researchers have developed a number of intriguing approaches to the study and use of naturalistic teaching strategies, but unfortunately are not in the immediate purview of this limited review paper.

Natural Language Paradigm (NLP)

The Natural Language Paradigm (NLP) was designed to combine aspects of discrete trial language based programs (i.e., Lovaas et al., 1973) with naturalistic programs, such as the mand-model procedure (Rogers-Warren & Warren, 1980). NLP was originally designed by Koegel et al. (1987) and expanded upon by Laski et al. (1988). NLP is a play oriented speech and language training program which is used frequently at the Claremont Autism Center, both to teach speech to non-verbal children, and to improve speech with echolalic children. As you will see below, it is a motivation oriented procedure which makes work on a difficult-to-teach behavior (speech) fun for both the child and the therapist.

There are four basic components of NLP. The first is direct reinforcement of verbal attempts such as "ah" as an approximation of "apple". The reinforcement consists of praise and access to the object used in the demonstration (functionally related item). Eventually more is required of the child to access reinforcement. Shaping or the direct reinforcement of successive approximations increases motivation by maximizing the likelihood of the child's success while the use of natural reinforcers enhances functional relationships and generalization.

The second component is turn-taking with the toys. Both the teacher and the child take turns talking about and playing with the toy. The teacher models a verbalization about the toy and when the child either imitates or attempts to imitate the verbalization, the teacher gives the child the toys for a few seconds for "his turn". The teacher then takes the toys for another "turn" and models another phrase about the toy. This turn-taking process facilitates generalization by increasing the similarity between the NLP sessions and the natural environment. In addition, turn-taking adds a more game-like or play atmosphere to the work session which may facilitate motivation. Although not yet directly measured, it is possible that the turn-taking component of NLP may also facilitate social behavior by directly teaching an important and developmentally appropriate social skill.

The third basic component to NLP is task variation and the use of multiple exemplars. NLP uses a variety of toys to illustrate a particular phrase, and uses a variety of phrases to describe a particular toy. For example, the teacher can model "frog hops" but then would also model " bunny hops" while demonstrating the hopping movement with the toys. Additionally, the teacher may say "frog hops" for the frog toy, but also vary the phrase and say "frog jumps", or "frog is green". This variation not only makes the speech training session more fun, but promotes generalization.

Finally, the fourth component is shared control. At the start of each NLP trial, the child selects, from a presented assortment, which toy he would like to play with/speak about. So the child shares in the control of what is going to be learned in the NLP session. Also, if the child changes a verbalization or indicates that he would like to play with another object, the teacher should follow the child's lead. Thus, NLP makes use of the concept of shared control to maximize the effects of momentary changes in establishing operations which may work to increase reinforcer effectiveness. The general procedural steps for NLP are described in Table 1. For more detailed information see Koegel et al. (1987), Laski et al. (1988), Charlop-Christy and Kelso (1997) or Charlop-Christy and LeBlanc (in press).

The Natural Language Paradigm (NLP)

Table 1:
Natural Language Paradigm (NLP) Procedural Steps

1. Sit facing the child either in chairs or on the floor. Provide lots of toys, books, and functional objects (toothbrushes, cups, etc.). These items should be of interest to the child and be placed adjacent to you, but out of the child's immediate reach.

2. Place three objects in front of the child and ask him/her to choose one. The child may point, reach, or say the name of the object. Initially, you may need to prompt choosing

3. Retain the chosen item and remove the others.

4. Repeatedly model an appropriate phrase while engaging in the corresponding activity. If the child chose a toy car, you might say "roll car" while rolling the car back and forth.

5. Pause 5 seconds to allow verbal imitation or imitation attempts. Initially, nonverbal children may utter any sound to get the toy. In our example, the therapist says "roll car" while rolling the car. She pauses to allow imitation, echoing, or an approximation. The child responds with "ah." If that response is appropriate for that child, the therapist should praise ("Good talking", "Good try") and give the child the car. Clearly, "ah" would not be an acceptable response if the child had previously said "car" many times.

6. If necessary, prompt the child to speak by allowing the child to have his hand on the toy with your hand over the child's hand. Do not let go of the toy until the child makes his attempt to verbalize. Remove your hand and release the toy to the child contingent upon a verbalization. This provides the child with immediate and direct reinforcement.

7. As the child plays, the therapist should repeat the modeled phrase a few times (e.g., while the child is rolling the car, the therapist says "Roll car. Roll car. Roll car").

8. After the child plays for 3-5 seconds, say "my turn" and have the child give you the toy. Model a different phrase for the same object ("drive car" or "car goes fast").

9. After a few exchanges between therapist and child with a few different verbalizations modeled, the child should select a new toy. Choose 3 other toys from the adjacent assortment and ask the child to choose. Repeat steps 4-8 with this new object. After several toys have been played with, you may take a break or go on to a different task.

10. Remember to change activities and words frequently to keep the child's interest.

was designed to combine aspects of discrete trial language based programs such as one on one training settings with aspects of incidental programs such as shared control. The procedure was designed to address the perceived trade off between tight stimulus control employed in traditional discrete trial programs and looser stimulus control employed in incidental programs. Initially, researchers expected that these programs might result in much slower acquisition because of the looser stimulus control, but the data suggest that rapid acquisition is maintained while generalization is enhanced with NLP.

For example, Laski et al. (1988) evaluated the effectiveness of NLP when used by parents of two groups of children with autism, "mute" and echolalic children. In this study, parents were trained to criterion on implementation of the program in a clinic setting, but all treatment sessions between parent and child occurred in the home. The results indicated that the children's speech increased quite rapidly. The most speech gains were seen with the echolalic children. However, the "mute" children also improved dramatically. It is important to keep in mind that during baseline of this study, the children were receiving discrete trial speech training as described by Lovaas (1981), and failed to learn this way. NLP was thus associated with rapid learning and with speech gains which generalized to untrained settings. Parents reported that they enjoyed the NLP sessions and that they thought their children had enjoyed the sessions as well.

Speech and Play Enhancement for Autistic Kids (SPEAK)

While NLP presents trials in a play oriented manner, it is clear that the concept of "trials" is still in place and that the loose structure of a free play environment is not used. NLP may be seen as the first step in the direction of loosening of structure and using a therapy setting which more closely approximates a play situation. Speech/Play Enhancement for Autistic Kids (SPEAK) was designed to integrate training for both speech and play in young children with autism. Incorporating speech training into a play setting can create a more enjoyable learning environment by enhancing child motivation while allowing the therapist to teach two appropriate target behaviors - play skills and speech.

Importantly, the SPEAK program maximizes the effects of natural developmental skill progression which is evident in typical children, and may also be evident in children with autism. It is well documented that typical children learn to play as early as infancy, well before they learn to speak (Bower, 1982; Nelson, 1973; Willemsen, 1979) Indeed, while conducting a program evaluation study of the Claremont Autism Center, Kelso and Charlop-Christy (1996) found that children with autism under the age of 6 years made more gains in play skills while their older counterparts (6 years and older) demonstrated more gains in speech. Thus, play behaviors and speech may be developmentally related in children with autism, with gains in play behaviors occurring before gains in speech. The SPEAK program attempts to capitalize on this possible developmental progression and to "piggyback" the acquisition of the more difficult behavior (speech) on the easier gains seen with a higher probability behavior (play). Development of such a naturalistic teaching strategy seems quite appropriate since: 1) it may be developmentally appropriate to incorporate play; 2) play is easier to teach than speech, and finally; 3) play behavior is an appropriate target in and of itself.

The SPEAK program is conducted in a free-play setting with preferred toys including items with which the child may be obsessed. The free play setting more closely approximates the natural environment and, therefore, facilitates generalization. In addition, a free play setting is more likely to contain varied reinforcers which may motivate the child. The use of preferred toys, especially the use of toys which may be the objects of obsession, may further maximize the motivating features of the learning environment (Charlop et al., 1990). Also, these kinds of items available in a free play setting are more likely to be encountered in the natural environment and may promote generalization.

The child and the trainer initially play independently and the child is allowed to

choose any toy and move from item to item according to his/her changing preferences. This "child choice" is considered to be an important component of SPEAK which allows the child to indicate changes in preference which may affect reinforcer effectiveness. Approximately each minute, a "contact" occurs in which the therapist models a contextually appropriate speech utterance. The speech utterance is a phrase or word about the item in the child's possession. For example, if the child is playing with a truck "drive" would be appropriate to the activity. The label of the item may also be modeled for the child to imitate and/or approximate. For example, the therapist could merely say "truck" when the child is playing with the truck. Any approximation would be reinforced with: a) access to the item (giving the truck to the child), b) access to an enjoyable play activity (rolling the truck), c) praise ("good job") and d) a natural response by the therapist ("I like trucks, too"). If the child does not have a toy at the time of the "contact", the trainer would suggest one and model both appropriate play and speech. At each contact, if the child was not playing appropriately, both play and speech would be modeled by the trainer but no reprimands would be presented for inappropriate manipulation of the item.

In a recent investigation, Valdez (1998) demonstrated that the SPEAK program could be used to increase both play and speech in three young boys with autism who participated in the afterschool program at the Claremont Autism Center. A multiple baseline design across participants was used to evaluate the effectiveness of the SPEAK program with two children who demonstrated no speech in baseline and one child who demonstrated low frequencies of speech in baseline. This latter participant merely iterated letters of the alphabet and numbers out of context. In baseline, a therapist was instructed to talk and play with the child for ten minutes in a free play setting. In addition, identical baseline generalization probes were conducted with unfamiliar persons. Treatment sessions consisting of the SPEAK program were alternated with generalization probes with the naive participant from the baseline condition. SPEAK was effective in increasing speech in all three children and all three children also demonstrated increases in appropriate play. Perhaps the most important finding was that both speech and play generalized across persons and settings. A summary of the results of this study are presented in Table 2.

Multiple Incidental Teaching Sessions (MITS)

A third naturalistic teaching strategy recently developed at the Claremont Autism Center is Multiple Incidental Teaching Sessions (MITS). MITS represents a compromise between traditional incidental teaching (IT) procedures and discrete trial (DT) procedures. MITS incorporates the assumptions of IT by conducting training in the natural environment using naturally occurring opportunities and using situationally appropriate functional phrases (McGee et al., 1985). In this manner, MITS is easy for parents and teachers to learn and conduct in their home or classroom throughout the day. In addition, MITS incorporates additional training trials commonly used in discrete trial procedures to maximize the likelihood of rapid response acquisition which is commonly associated with discrete trial training procedures (Lovaas, 1981).

In the MITS procedure, the child initiates the interaction in the natural setting much like incidental teaching procedures. But, like milieu therapy, the parent controls the number of daily trials by incorporating practice trials (Rogers-Warren & Warren, 1980). For example, the child may initiate the interaction by approaching the refrigerator, allowing a training opportunity for the phrase "juice please." The parent can then conduct the first trial by a) providing a brief time delay to allow the opportunity for spontaneous speech to occur, b) modeling the phrase if no spontaneous speech occurs, c) praising/reinforcing an appropriate verbal approximation, and d) conducting two immediate additional practice trials. The practice trials might be conducted by having the parent respond to the first verbal attempt with praise and the prompt "Let's practice that again." Thus, three training trials are conducted in each block; the initial trial and two practice trials. Typically two train-

Table 2: Summary of Treatment Results for Valdez (1998) Presented as the Mean Number of Verbal Responses Per Session for Each Child for Baseline Sessions, Treatment Sessions and Generalization Probes.

Child	Mean Verbal Responses Per Session		
	Baseline	Treatment	Generalization Probe
1	0	3	1.8
2	0	1.8	1.7
3	11.6	31.6	31.4

Table 3: Summary of treatment conditions in Charlop-Christy & Carpenter (1997).

Treatment Condition	Setting	Number of Trials
IT	natural environment, "as it happens"	1
DT	segregated one-on-one therapy session	10
MITS	natural environment, "as it happens"	6*

* 2 naturally occurring opportunities with 2 additional practice trials at each opportunity

Table 4: Summary of Treatment Results for Charlop-Christy & Carpenter (1997) Presented as Percentage of Trials with Spontaneous Language for Each Phase of Evaluation of Each Language Intervention.

Child 1: Condition	IT	DT	MITS
Baseline	0	0	0
Treatment	33	67	74
Generalization	0	0	100
Child 2: Condition	**IT**	**DT**	**MITS**
Baseline	0	0	0
Treatment	72	20	83
Generalization	0	0	100
Child 3: Condition	**IT**	**DT**	**MITS**
Baseline	0	0	0
Treatment	0	80	91
Generalization	0	0	100

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ing blocks of three trials are conducted throughout the day.

In a recent study, Charlop-Christy and Carpenter (1997) directly compared the effects of Incidental Teaching (IT), Discrete Trial Training (DT) and Multiple Incidental Teaching Sessions (MITS) for speech acquisition and generalization in young children with autism. A multiple baseline design across subjects was used to evaluate the effectiveness of the each procedure for increasing speech while the procedures were directly compared for each child by incorporating an alternating treatments design (see Table 3). Each procedure was paired with a different phase for each child. All treatment protocols were implemented in the home setting by parents who were trained to criterion on each treatment procedure. In addition, generalization probes were conducted in novel settings and with novel people (e.g., siblings).

Each of the treatment procedures was effective in increasing some speech behaviors; however, MITS was the only procedure associated with generalization of spontaneous speech. A summary of the results of this investigation is presented in Table 4. Discrete trial procedures led to rapid acquisition of imitative speech and more moderate increases in spontaneous speech, but these speech gains did not generalize to new settings or persons. Incidental teaching procedures resulted in slower response acquisition of imitative speech with no increases in spontaneous speech and no generalization. It should be noted that a longer evaluation of the incidental teaching procedure may have resulted in greater acquisition and generalization of speech. The MITS procedure resulted in a rate of speech acquisition that was comparable to discrete trial methods and resulted in generalization effects that surpassed both other training methods. Finally, parents who participated in the study reported that they were more likely to implement the MITS program more frequently and more accurately than discrete trial procedures.

Time Delay

The time delay procedure was originally researched by Touchette (1971) and adapted to the field of mental retardation by Halle and colleagues to teach spontaneous speech (Halle, Marshall, & Spradlin, 1979; Halle et al., 1981). In our research with children with autism, we defined spontaneous speech as "speech in the absence of a verbal cue" (Charlop et al., 1985; Charlop & Walsh, 1986; Charlop & Trasowech, 1991). Thus, a child's response to a verbal cue such as "Say hi" , "What's your name?" , or "What's this?" would not be considered spontaneous. However, a child who says "Hi" upon seeing you or says "I want coke" upon seeing a soda can has emitted a spontaneous response because no verbal prompt or cue occurred. The time delay procedure works very well for a variety of situations and types of spontaneous speech. Table 5 presents a brief, illustrative (not exhaustive) list of several situations appropriate for use of the time delay procedure to occasion spontaneous speech.

There are two types of time delay: graduated time delay and constant time delay. Graduated time delay involves initiating training with no time interval at all between establishment of the child's attention and modeling an appropriate verbalization. Gradually the time interval between initial establishment of attention and the verbal model is increased. So, if the therapist is trying to teach a child to say "Good morning", he/she initially establishes eye contact with the child and immediately models "Good Morning" for the child to imitate. When the child reliably imitates the model with no delay to prompt, the therapist increases the interval between establishing eye contact in the setting and modeling "Good Morning" by two second increments until a delay of 10 seconds is reached.

The key feature of time delay is the transfer of control of the child's speech to naturally occurring environmental stimuli and conversational pauses. As the time delay is gradually increased, stimulus control gradually transfers from the adult's modeled phrase to the delay that is provided and the specific setting and stimulus conditions associated with

Table 5:
A Brief Sample of Some Appropriate Situations for use of Time Delay.

To request a desired item, "I want cookies"

To request a desired setting, "I want outside"

To request a desired activity, "I want to run"

To request a need, "Eat"

To express a feeling, "I'm sleepy"

To provide a greeting, "Hi"

To initiate an interaction, "let's play"

To initiate a conversation, "How are you?"

Table 6:
Time Delay Procedure for Requests of Items: Graduated Time Delay

1. Present a desired item (e.g. toy, snack) by either holding lifting it in front of the child or placing it on the table. For example, hold up a favorite book.

2. Establish eye contact with the child.

3. Immediately model the target phrase "I want book" for the child to imitate.

4. Allow no more than 10 seconds after the modeled phrase for the child to respond. If the child imitates, then provide praise and the item. If the child does not imitate the response, then provide verbal feedback ("No, let's try again").

5. Repeat steps 1-4.

6. If imitation does not occur, present this task again later.

7. After five consecutive trials of imitation at a 0 second delay to prompt, increase to a two second delay.

8. Repeat steps 1-4 with a two second delay.

9. If the child imitates your phrase, then provide reinforcement (praise and book). However, the child may speak spontaneously (during the delay before the model).

10. After the child either imitates or speaks spontaneously on 5 consecutive trials, go to a 4 sec delay. Note: Even if the child is only imitating, increase the delay. Data indicate that time delay works even if only imitative speech occurs in the first few delay levels.

11. Continue the procedure until a 10 sec delay. If the child is speaking spontaneously by the 4-6 sec delay, continue with gradual fading. Do not skip to the ten sec delay. Gradual fading aides in transfer of stimulus control from the object (book) to the delay.

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Table 7. Comparison of Discrete Trial Procedures with Specific Naturalistic Training Programs.

Variable	Discrete Trials (DT)	Natural Language Paradigm (NLP)	SPEAK	MITS
Number of trials	10-20	3-6	1-5	6
Trial Selection	trainer choice	child choice	child choice	setting dependent with elements of child choice
Stimulus Control	tight	loose	loose	loose
Setting	artificial work setting	semi-structured or unstructured play functional (highly preferred toys)	unstructured play	incidental or naturally occurring
Reinforcer	artificial/unrelated	functional (highly preferred edibles)	multiple, functional (praise, activities, highly preferred toys)	(activity, or item based on child's need or desire)

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the training environment. The time of day, the child's room and the first entrance into class all become stimulus conditions associated with the phrase "good morning." Constant time delay is also designed to transfer stimulus control of the child's speech to environmental cues rather than adult's prompts. However, constant time delay involves implementing the ten second delay from the initial training trial. The ten second delay is maintained throughout the remaining trials until training is successful and spontaneous speech occurs within the 10 second interval between initial eye contact and the verbal model.

The choice between graduated time delay and constant time delay should be based on several variables including the level of spontaneous speech, the type of speech being taught, and the level of staff training. First, graduated time delay should be implemented for children with relatively little spontaneous speech while children with more spontaneous speech may benefit from the constant time delay procedure. Second, graduated time delay should be used to teach abstract spontaneous speech (e.g., "good morning") while a constant time delay may prove more effective the response is more concrete (e.g., "I want soda"). Third, while graduated time delay is highly likely to be effective, correct implementation of the procedure is more difficult because it requires more extensive knowledge of stimulus fading techniques. In general, we recommend using graduated time delay to teach new or abstract responses and using constant time delay for later, concrete responses. The procedural steps for using time delay in common situations in a child's daily activities are presented in Table 6.

Conclusions

Historically, intensive language training procedures have been the first line of attack in increasing the speech of young children with autism. These procedures, pioneered by Lovaas in the 1960s and 1970s, have proven effective in producing rapid speech acquisition, but have generally not produced functional spontaneous speech gains that generalize to the natural environment. Incidental teaching offers more unstructured and natural teaching opportunities which generally enhance generalization of speech, but do not produce such rapid speech gains. Each of these techniques have proven quite effective in promoting speech acquisition, but neither independently addresses all of the language concerns faced by children with autism and their families. Thus, these techniques have led to the development of naturalistic teaching strategies which share a variety of common features. These features include the use of loose stimulus control, incorporation of child choice into task and reinforcer selection, and the use of naturally occurring play settings (see Table 7).

Extensive empirical evidence exists to support the use of naturalistic teaching strategies with children with autism (Charlop-Christy & Carpenter, 1997; Charlop & Trasowech, 1991; Koegel et al., 1987; Laski et al., 1988). In the past, naturalistic teaching strategies may have been underrated in terms of speed of language acquisition, but recent data indicate that language may be acquired at acceptable rates (Charlop-Christy & Carpenter, 1997; Halle et al., 1979; McGee et al., 1985). Importantly, generalization of treatment gains is strong when naturalistic teaching strategies are used.

Naturalistic teaching strategies are well designed for use by parents, teachers, and siblings because they create an enjoyable work/play environment and maximize the motivation of the child with autism (Charlop-Christy & Schreibman, 1998). Parents prefer these strategies because they are typically easy to learn and implement and easy to integrate into a hectic daily schedule (Charlop & Trasowech, 1991). Teachers may also find that these strategies fit comfortably with their existing classroom routine. Parents and teachers are generally the consumers of these strategies as opposed to outside specialty staff hired to conduct sessions. These naturalistic strategies will facilitate integration of behavioral intervention approaches into home, community, and school systems. Discrete trial and incidental teaching procedures still represent valuable tools in the treatment of speech deficits, but

naturalistic teaching strategies can only enhance our effectiveness in increasing the functional skills of children with autism.

References

Bower, T. G. R. (1982). *Development in infancy: Second edition.* San Francisco: Freeman and Company.

Carr, E. G. (1977). The origins of self-injurious behavior: A review of some hypotheses. *Psychological Bulletin, 84,* 800-816.

Carr, E. G., Binkoff, J. A., Kologinsky, E., & Eddy, M. (1978). Acquisition of sign language by autistic children. I. Expressive labeling. *Journal of Applied Behavior Analysis, 11,* 489-501.

Charlop, M. H. (1983). The effects of echolalia on acquisition and generalization of receptive labeling in autistic children. *Journal of Applied Behavior Analysis, 16,* 111-126.

Charlop, M. H., & Haymes, L. K., (1994). Speech and language acquisition and intervention: Behavioral approaches. In J. L. Matson (Ed.) *Autism in children and adults: Etiology, assessment, and intervention (pp. 213-240),* Pacific Grove, CA: Brookes/Cole.

Charlop, M. H. & Milstein, J. P. (1989). Teaching autistic children conversational speech through video modeling. *Journal of Applied Behavior Analysis, 22,* 275-285.

Charlop, M. H., & Trasowech, J. B. (1991). Increasing autistic children's daily spontaneous speech. *Journal of Applied Behavior Analysis, 24,* 247-261.

Charlop, M. H., & Walsh, M. (1986). Increasing autistic children's spontaneous verbalizations of affection through time delay and modeling. *Journal of Applied Behavior Analysis, 19,* 307-314.

Charlop, M. H., Kurtz, P. F. & Casey, F. G. (1990). Use of aberrant behaviors as reinforcers for autistic children. *Journal of Applied Behavior Analysis, 23,* 163-181.

Charlop, M. H., Kurtz, P. F. & Milstein, J. P. (1993). Too much reinforcement, too little behavior: Assessing different reinforcement schedules in conjunction with task variation with autistic children. *Journal of Applied Behavior Analysis, 26,* 225-239.

Charlop, M. H., Schreibman, L. & Thibodeau, M. G. (1985). Increasing spontaneous verbal responding in autistic children using a time delay procedure. *Journal of Applied Behavior Analysis, 18,* 155-166.

Charlop-Christy, M. H., & Carpenter, M. (1997). Modified Incidental Teaching Sessions (MITS): A procedure for parents to increase spontaneous speech in their children with autism. In M. H. Charlop-Christy (Chair), New techniques to address language acquisition, social behavior, and severe problem behavior in young children with autism. Conference of the Southern California Association of Behavior Analysis (October, 1997), Pasadena, CA.

Charlop-Christy, M. H., & Haymes, L. (1996). Using obsessions as reinforcers with and without mild reductive procedures to decrease inappropriate behaviors of children with autism. *Journal of Autism and Developmental Disorders, 26,* 527-546.

Charlop-Christy, M. H., & Haymes, L. (1998). Using autistic children's obsessions as token reinforcers to increase task response. *Journal of Autism and Developmental Disorders, 28,* 189-198.

Charlop-Christy, M. H., & Kelso, S. E. (1997). *How to Treat the Child with Autism: A Guide to Treatment at the Claremont Autism Center.* Claremont, CA: Claremont McKenna College.

Charlop-Christy, M. H., & LeBlanc, L. A. (in press). Naturalistic teaching strategies for acquisition, generalization and maintenance of speech in children with autism. In P. Ghezzi, L. Williams, & J. Carr (Eds), *Autism: Behavior Analytic Perspectives.* Reno, NV: Context Press.

Charlop-Christy, M. H. & Schreibman, L. (1998). Autistic disorder, In T. J. Ollendick and M. Hersen (Eds.), *Handbook of child psychopathology* (3rd ed. pp.157-179). New York: Plenum Publishing Co.

DeLeon, I. G., & Iwata, B. A. (1996). Evaluation of a multiple-stimulus presentation format for assessing reinforcer preferences. *Journal of Applied Behavior Analysis, 29,* 519-533.

Dunlap, G., & Koegel, R. L. (1980). Motivating autistic children through stimulus variation. *Journal of Applied Behavior Analysis, 13,* 619-627.

Egel, A. L. (1981). Reinforcer variation: Implications for motivating developmentally disabled children. *Journal of Applied Behavior Analysis, 14,* 345-350.

Farmer-Dougan, V. (1994). Increasing requests by adults with developmental disabilities using incidental teaching by peers. *Journal of Applied Behavior Analysis, 27,* 533-544.

Halle, J. (1984). Natural environment language assessment and intervention with severely impaired preschoolers. *Topics in Early Childhood Special Education, 4,* 36-56.

Halle, J. W., Baer, D. M., & Spradlin, J. E. (1981). Teachers generalized use of delay as a stimulus control procedure to increase language use in handicapped children. *Journal of Applied Behavior Analysis, 14,* 389-409.

Halle, J., Marshall, A.M., & Spradlin, J. E. (1979). Time delay: A technique to increase language use and facilitate generalization in retarded children. *Journal of Applied Behavior Analysis, 12,* 431-439.

Harris, S. L., Wolchik, S. A., & Weitz, S. (1981). The acquisition of language skills by autistic children: Can parents do the job? *Journal of Autism and Developmental Disorders, 2,* 373-384.

Hart, B., & Risley, T. R. (1968). Establishing the use of descriptive adjectives in the spontaneous speech of disadvantaged preschool children. *Journal of Applied Behavior Analysis, 1,* 109-120.

Hart, B., & Risley, T. R. (1975). Incidental teaching of language in the preschool. *Journal of Applied Behavior Analysis, 8,* 411-420.

Kaiser, A. P., Ostrosky, M. M., & Alpert, C. L. (1993). Training teachers to use environmental arrangement and milieu teaching with nonvocal preschool children. *Journal of the Association for Persons with Severe Handicaps, 18,* 188-199.

Kelso, S. & Charlop-Christy, M. H (1996). A study of age at intervention in an evaluation of a behavioral treatment program for children with autism: A preliminary report. Poster presented at the 22nd annual convention of the Association for Behavior Analysis, San Francisco, CA May 24-28, 1996.

BEST COPY AVAILABLE

Koegel, R. L., & Koegel, L. K. (1986). Promoting generalized treatment gains through direct instruction of self-monitoring procedures. *Direct Instruction News, 5,* 13-15.

Koegel, R. L., & Rincover, A. (1977). Research on the difference between generalization and maintenance in extra-therapy responding. *Journal of Applied Behavior Analysis, 10,* 1-12.

Koegel, R. L., O'Dell, M. C., & Dunlap, G. (1988). Motivating speech use in nonverbal autistic children by reinforcing attempts. *Journal of Autism and Developmental Disorders, 18,* 525-537.

Koegel, R. L., O'Dell, M. C., & Koegel, L. K. (1987). A natural language paradigm for teaching non-verbal autistic children. *Journal of Autism and Developmental Disorders, 17,* 187-199.

Koegel, R. L., Schreibman, L., Good, A., Cerniglia, L., Murphy, C., & Koegel, L. K. (1989). *How to Teach Pivotal Behaviors to Children with Autism.* Santa Barbara: University of California.

Laski, K. E., Charlop, M. H., & Schreibman, L. (1988). Training parents to use the Natural Language Paradigm to increase their autistic children's speech. *Journal of Applied Behavior Analysis, 21,* 391-400.

Lovaas, O. I. (1977). *The autistic child.* New York: Irvington.

Lovaas, O. I. (1981). *Teaching developmentally disabled children: The me book.* Austin, Texas: Pro-Ed, Inc.

Lovaas, O. I. (1987). Behavioral treatment and normal educational and intellectual functioning in young autistic children. *Journal of Consulting and Clinical Psychology, 55,* 3-9.

Lovaas, O. I. (1993). The development of a treatment-research project for developmentally disabled and autistic children. *Journal of Applied Behavior Analysis, 26,* 617-630.

Lovaas, O. I. & Taubman, M. T. (1981). Language training and some mechanisms of social and internal control. *Analysis and Intervention in Developmental Disabilities, 1,* 363-372.

Lovaas, O. I., Koegel, R. L., Simmons, J. Q., & Stevens-Long, J. (1973). Some generalization and follow-up measures on autistic children in behavior therapy. *Journal of Applied Behavior Analysis, 6,* 131-166.

Michael, J. (1982). Distinguishing between the discriminative and motivational functions of stimuli. *Journal of the Experimental Analysis of Behavior, 37,* 149-155.

Michael, J. (1993). Establishing operations. *The Behavior Analyst, 16,* 191-206.

McGee, G. G., Krantz, P. J., & McClannahan, L. E. (1985). The facilitative effects of incidental teaching on preposition use by autistic children. *Journal of Applied Behavior Analysis, 18,* 17-31.

McGee, G. G., Krantz, P. J., Mason, D., & McClannahan, L. E. (1983). A modified incidental teaching procedure for autistic youth: Acquisition and generalization of receptive object labels. *Journal of Applied Behavior Analysis, 16,* 329-338.

Nelson, K. (1973). Structure and strategy in learning to talk. *Monographs of the Society for Research in Child Development, 38* (No. 149).

Pauls, D. (1987). The familiarity of autism and related disorders: A review of the evidence. In D. Cohen and A. Donnellan (eds), *Handbook of Autism and Pervasive Developmental Disorders* (pp. 192-198). New York, NY: Wiley.

Pierce, K., & Schreibman, L. (1995). Increasing complex social behaviors in children with autism via peer-implemented pivotal response training. *Journal of Applied Behavior Analysis, 28,* 285-295.

Prizant, B. B. (1982). Gestalt language and gestalt processing in autism. *Topics in Language Disorders,* 3, 16-23.

Prizant, B. M. (1983). Language acquisition and communicative behavior: Toward an understanding of the "whole" of it. *Journal of Speech and Hearing Disorders, 48,* 296-307.

Rimland, B. (1964). *Infantile autism.* New York, NY: Appleton-Century-Crofts.

Rogers-Warren, A., & Warren, S. F. (1980). Facilitating the display of newly trained language in children. *Behavior Modification, 4,* 361-382.

Schreibman, L. (1988). *Autism.* Newbury Park, CA: Sage Publishing Co.

Schreibman, L., Kaneko, W. M., & Koegel, R. L. (1991). Positive affect of parents of autistic children: A comparison across two teaching techniques. *Behavior Therapy, 22,* 479-490.

Schreibman, L. & Koegel, R. L. (1996). Fostering self-management: Parent-delivered pivotal response training for children with autistic disorder. In E. D. Hibbs & P. S. Jensen (Eds) *Psychosocial treatment research with children and adolescents: Empirically based strategies for clinical practice (pp. 525-552).* Washington D. C. : American Psychological Association.

Skinner, B. F. (1957). *Verbal Behavior.* New York: Appleton-Century-Crofts.

Spradlin, J. E., & Siegel, G. M. (1982). Language training in natural and clinical environments. *Journal of Speech and Hearing Disorders, 47,* 2-6.

Stahmer, A. (1995). Teaching symbolic play skills to children with autism using Pivotal Response Training. *Journal of Autism and Developmental Disorders, 25,* 123-141.

Stokes, T. F., & Baer, D. M. (1977). An implicit technology of generalization. *Journal of Applied Behavior Analysis, 10,* 349-367.

Touchette (1971). Transfer of stimulus control: Measuring the moment of transfer. *Journal of Experimental Analysis of Behavior, 15,* 347-354.

Valdez, A. C. (1998). *Increasing play and speech behaviors in children with autism using play-speech therapy.* Unpublished senior thesis, Claremont McKenna College, Claremont, CA.

Volkmar, F. R., & Cohen, D. J. (1994). Autism: Current concepts. *Psychoses and Pervasive Developmental Disorders, 3,* 43-52.

Warren, S. F., McQuarter, R. J., & Rogers-Warren, A. K. (1984). The effects of mands and models on the speech of unresponsive language-delayed preschool children. *Journal of Speech and Hearing Disorders, 49,* 43-52.

Willemsen, E. (1979). *Understanding infancy.* San Francisco: Freeman and Company.

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WORKING WITH FAMILIES: UNDERSTANDING PARENT VIEWS REGARDING INCLUSIVE PLACEMENTS FOR THEIR CHILDREN WITH SIGNIFICANT COGNITIVE DISABILITIES.

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Abstract: Students with significant cognitive disabilities are increasingly being served in general education classrooms. As interdisciplinary team members who work closely with parents in educational decision making, school psychologists need to understand, and anticipate, parent preferences and concerns regarding inclusive placement options for their children. This study investigates influences on parent perceptions of inclusive practices for children with significant cognitive disabilities. Findings isolate the predictive effects of variables associated with child and parent characteristics, as well as school history on such perceptions. Discussion includes how these findings may offer insight into reasoning used by some parents when considering the benefits of more inclusive educational placements for their own children.

The trend toward serving a larger number of students with significant cognitive disabilities primarily within the general education classroom (Katsiyannis, Conderman, & Franks, 1995; Sawyer, McLaughlin, & Winglee, 1994) means that school psychologists can expect to encounter an increasing number of parents who may be considering such placements. Given the increased awareness of the importance of parent and family involvement in educational decisions making (Donnellan & Miranda, 1984; Erwin & Soodak, 1995; Gartner, 1988; Giangreco, Cloninger, Mueller, Yang & Ashworth, 1991; Lipski, 1989; Murray, 1990; Nietupski & Hamre-Nietupski, 1987; Turnbull & Turnbull, 1990), it would be useful for school psychologists to understand the dynamics underlying parent preferences regarding inclusive programming so that they can better encourage family input when considering such placements for their children. However, the debate over the efficacy inclusive practices (i.e., Kaufman & Hallahan, 1995; Lipsky & Gartner, 1994; Shanker, 1994; Siegal, 1994) has largely been carried out in an academic arena and has provided little information regarding the complex nature of the reasoning process a parent undergoes when considering educational placement options.

Anecdotal and published (i.e., Erwin & Soodak, 1995) reports of families fighting to obtain inclusive programming for their children with significant disabilities may have created the impression that most parents are, or would be, in favor of such placements given the opportunity. However, while published views on inclusion in the professional literature, and in the mass media, may suggest that there is consensus that inclusive programming is the most efficacious way to educated exceptional children, the ideal of inclusion has not received universal support and is not considered to be synonymous with the "least restrictive environment" by many who represent such students (Borthwick, Palmer, & Lane, 1996). School psychologists should be wary of the assumption of homogeneity when dealing with families of children with significant disabilities (Murray, 1990) and understand that parents are unlikely to hold similar views regarding inclusive placements, or any other educational practice, simply on the basis of their child's special education eligibility condition. Parent preferences regarding placement options are likely to be based on more significant issues such as curricular preferences, the availability of special services, and the effects of various placement options on the social treatment of their children (Borthwick-Duffy, Palmer, & Lane, 1996; Green & Shinn , 1994; Guralnick, Connor, & Hammond, 1995; Hamre-Nietupski,

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Nietupski, & Strathe, 1992; Ryndak, Downing, Morrison & Williams, 1996; York & Tundidor, 1995).

Perceptions regarding inclusive practices are indeed likely to be multidimensional, differentiated by considerations of the impact of inclusive practices on different domains of the child's educational experience (Anotonak & Larrivee, 1995; Schmeikin, 1981; Semmel, Abernathy, Butera, & Lesar, 1991; Wilczenski, 1992). A more complete understanding of these multidimensional dynamics would provide important information to school psychologists who may be experiencing parental demand for such placements. For example, understanding the relationship between child characteristics, such as the degree or nature of disabling conditions, and parent views regarding the impact of inclusion may allow school psychologists to anticipate the characteristics and needs of children whose parents are more likely to request such placements. This knowledge can then be used to prepare the necessary supports needed to accommodate such child characteristics.

Information regarding multidimensional influences on perceptions would also give school personnel who are interested in creating inclusion programs a better understanding of why some parents are resistant to such efforts. This information can be used to project which parents are likely to be willing participants in pilot inclusion programs or to anticipate and address potentially negative perceptions more directly.

While some studies have emerged which consider influences on parent preferences regarding inclusive placement options (Downing, Eichinger, & Williams, 1997; Erwin & Soodak, 1995; Green & Shinn, 1994; Ryndak, Downing, Jacqueline & Morrison, 1995; Ryndak et al, 1996; York & Tunidor, 1995) most involve relatively small samples sizes and use a case study or other qualitative format for analysis (Hunt & Goetz, 1997). Further, the bulk of the literature regarding parent perceptions and attitudes has focused on inclusive practices for children with mild or moderate disabilities (i.e., Hayes & Gunn, 1988; Lowenbraun & Affleck, 1990; Mlynek, Hannah, & Hamlin, 1982) rather than students with significant disabilities. However, since inclusive programming for students with significant disabilities is likely to be controversial (Borthwick-Duffy et al., 1996) and often requires a great degree of program planning, an understanding of parent preferences regarding this population is particularly needed. This study was designed to address this need.

Sample

An invitation to participate in the study was sent to all parents or guardians who had at least one child, from three to twenty-two years of age, being served in a public school special day class setting designed for children with significant disabilities run by the Los Angeles County Office of Education, the Orange County Department of Education, or the North Orange County Special Education Local Plan Area in California.

In California, students with the most severe disabilities are often served under administrative agencies which cover a wider area than most school districts. This arrangement allows districts to pool their resources and centralize services for this relatively low incidence population. Two such administrative configurations are the Special Education Local Plan Area (SELPA) and the County Departments of Education. The present sample was selected from such agencies in order to access parents of children with the most significant forms of disability.

The Orange County Department of Education, North Orange County SELPA, and the Los Angeles County Office of Education were specifically solicited for participation in the study due to the wide geographic areas they cover and the diversity of the parent and student populations they serve.

A further criterion for participation in the study was that the special education eligibility condition of the child had to include a diagnoses of mental retardation. Therefore, parents of students who were being served in a county or SELPA special day class programs designed for students with severe disabilities whose special education eligibility conditions involved visual or hearing deficits, or a seri-

ous emotional disturbance without comorbidity in cognitive delays, were excluded from the study. To assure adherence to these sampling criterion, an administrative authority from each participating educational agency who was familiar with the program characteristics of the special education sites under the agency's jurisdiction was involved in the process of developing the final lists of parents who were to be contacted.

3,267 parents were identified according to the above criteria and contacted by mail and asked to participate in the study. In response to the contact letters sent, 995 parents requested to participate by return postcards. These parents were sent the *Inclusion Survey*, a 62 item survey instrument designed specifically for the study. No follow-up material was sent to parents who did not respond to the initial mailing. Although the use of follow-up procedures has been found to greatly increase the final response rate for mailed survey studies (Dillman, 1978), the opportunity to use such procedures was limited in this situation due to a desire not to impose upon parents who were being contacted from addresses provided by educational agencies. Further, the number of parents initially contacted made it likely that the final sample would be sufficiently large to assure a high degree of validity associated with the results of the statistical modeling procedures conducted.

At the conclusion of the data collection phase of the study, a total of 476 surveys were returned - a 15% rate of return in reference to the initial mailing and a 48% return rate for those who requested surveys. Of the 476 surveys returned, 16 were excluded from data analysis procedures due to incompleteness; therefore data from 460 surveys were analyzed in subsequent procedures. Table 1 displays sample characteristics for the parents responding while Table 2 displays child data.

Procedure

Independent variables.

For a listing and description of all variables measured by the Inclusion Survey, see Table 3. Three constructs : (a) *Child Characteristics*, (b) *Placement History*, and (c) *Parent Characteristics* served as predictor variables in the study and were comprised of items or factors identified from previous research as being related to levels of parent support for more inclusive or integrated programs (Borthwick-Duffy et al., 1987; Ferrara, 1979; Giangreco et al., 1991; Larivee & Cook, 1979; Larson & Lakin, 1991; McDonnell, 1987; Noel, 1984; Stetson, 1984; Tausig, 1989; Thurman & Fiorelli, 1979).

Information regarding characteristics of the child was gathered through the use of individual question items and through scores on two scales from existing instruments that were incorporated into the Inclusion Survey. The first scale contained items comprising the Cognitive Domain of the *Client Development Evaluation Report* (CDER) which provides an estimate of general cognitive functioning through the assessment of such skills as number awareness, verbal and nonverbal expressive communication, and money handling. The CDER is an instrument primarily used to monitor the progress of clients served by the California Department of Developmental Services and has been previously found to demonstrate sound psychometric properties (Arias, Ito, & Takagi, 1983; California State Department of Developmental Services, 1978; Harris, Eyman, & Mayeda, 1982; Widaman, 1984; Widaman, Miller-Herringer, Borthwick-Duffy, 1987; Widaman, Stacy & Borthwick, 1985). The hypothetical range of scores for the items comprising the Cognitive Domain of the CDER is 13 through 68 with higher scores representing higher functioning. The mean score on this scale for the present sample was 32 while the standard deviation was 12.16.

The second scale contained a subset of relevant items from the Maladaptive Behavior section of the Behavior Development Survey (BDS). The BDS was developed as a short form of the AAMD Adaptive Behavior Scale for purposes of research (Nihira, 1978). The items selected from the BDS were drawn from the two maladaptive behavior factors on the instrument which assessed the presence and degree of such behaviors as physical violence, the tendency to damage property, and prone-

TABLE 1
Sample Characteristics of Parents Responding

Relation to Child	Percent of Total Sample
Mother	70.0
Father	18.7
Other (e.g., group home supervisor, relative)	11.3
Ethnic Identity	
Asian American	9.1
Black/African American	5.4
Hispanic/Latin American	17.6
White/Euro-American	62.6
Other/No response	5.2
Level of Education	
No formal Education	1.3
Elementary School	2.0
Some High School	4.8
High School Diploma or GED	15.7
Some College	31.5
College Degree: Two Year Degree	11.5
College Degree: Four Year Degree	14.3
Graduate Work	17.6
No Response to Question	1.3

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TABLE 2
Sample Characteristics of the Children

	Percent of Total Sample
Gender	
Male	58.0
Female	42.0
Hours currently spent in general education setting	
0	67.9
1 to 2	22.6
3 or more	9.5
Age Range	
3 to 5	20.7
6 to 8	19.1
9 to 11	15.9
12 to 14	16.3
15 to 17	13.9
18 to 20	10.8
21 to 23	3.3
Mean Age	*11.3*
Those Demonstrating Characteristics Requiring Specialized School Services	
Unable to walk	22.0
Walks only with help or walks unsteadily	22.4
Is not toilet trained at all	39.1
Has toilet accidents during the day	28.1
Has seizures	22.8
Requires special equipment for mobility	35.4
Takes medication during the day	20.4
Needs medical or quasi medical procedures to be performed during the day	12.2
Needs to be monitored for behavioral or emotional problems	39.1
Needs close supervision during the day due to poor health or physical condition	22.6

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ness toward unacceptable sexual behavior. The hypothetical range of scores for the selected items from the Maladaptive Behavior section BDS is 12 through 36 with higher scores reflecting fewer maladaptive behaviors. The mean score on this scale for the present sample was 31 while the standard deviation was 3.84.

Information regarding characteristics of the parents and school related variables was gathered through individual question items designed for the study.

The variables contained within each of the three independent variable constructs discussed above were grouped (see Table 3) and treated as sets during the main data analysis procedure for reasons of parsimony and statistical efficiency (Cohen & Cohen, 1983; Schafer, 1991).

Dependent variables.

Five constructs served as dependent variables for purpose of studying influences on perceptions of inclusive practices. The first three, parent perceptions regarding the impact of increased integration into a general education classroom on: the *Quality of Educational Services* their child receives, *Mutual Benefits* to both their own child and to general education students in the class, and *Acceptance and Treatment* of their children were composed of factor scores and were based on previous research which found these, or similar, factors to be associated with parent perceptions of the normalization practice of deinstitutionalization, traditional mainstreaming, and support for integrated programs (Ferrara, 1979; Giangreco et al., 1991; Larrivee & Cook, 1979; Larson & Lakin, 1991; McDonnell, 87; Noel, 1984; Stetson, 1984; Tausig, 1989; Thurman & Fiorelli, 1979).

To assess parent perceptions regarding these three dependent variable constructs, a three factor, eleven item instrument , the *"Parent Attitudes Toward Inclusion (PATI) Scale"* was designed specifically for this study and incorporated into the Inclusion Survey. PATI Scale items were phrased to evoke general perceptions of the efficacy of general class placements for children with significant cognitive disabilities or to elicit perceptions regarding the effect of increasing the amount of time the child spends in these settings. For example, an item designed to assess parent perceptions of the impact of inclusive practices on *Acceptance and Treatment* of their child was worded, "The more time my child spends in a regular classroom, the more likely it is that he/she would end up feeling lonely or left out around the regular education students." For a complete listing of the items, means, and standard deviations associated with the three PATI Scale factors, see Table 4. The scale's psychometric properties and three dimensional factor structure related to the three dependent variable areas was examined and found to be satisfactory (Palmer, Borthwick-Duffy, & Widaman, 1998).

The remaining two dependent variables, identified as *Full Inclusion in General* and *Full Inclusion for Own Child* in subsequent data analysis procedures, involved parent perceptions regarding the efficacy of the full inclusion model of educational placement for children with severe disabilities in general, and their perceptions regarding the efficacy of the full inclusion model for their own child respectively. Perceptions on these two dimensions were assessed through parent responses to a written description of a full inclusion model program (see Figure 1) which incorporated elements of an ideal full inclusion model (Sailor, 1991). This description was worded carefully to present the model in a neutral descriptive manner so as not to influence perceptions. After reading the program description, parents were asked to rate, on a Likert scale, the extent to which they agreed or disagreed that the program described would be a "good idea" for most students with severe disabilities and for their own child (See table 5 for question outcomes).

Hierarchical Setwise Procedure

In order to evaluate the relationship between the three sets of independent variables and the five inclusion constructs, setwise hierarchical multiple regression procedures with protected t-tests were conducted through the use of the SAS computer program. In brief, this procedure involves grouping independent variables into sets according to some func-

TABLE 3

List of Variables Used in the Setwise Procedure and their Identifiers.

INDEPENDENT VARIABLES:

Set One: Child Characteristics:

1. Age **(AGE)** [a]
2. Level of cognitive functioning as measured by score on the Cognitive Domain of the Client Development Evaluation Report **(COGNITIVE)**
3. Level of maladaptive behavior as measured by score on Behavior Development Survey Maladative Behavior Factors **(BEHAVIOR PROBLEMS)**
4. Ability to walk **(WALK)**
5. Ability to toilet self **(TOILET)**
6. History of seizures at school **(SEIZURES)**
7. Need for specialized equipment for mobility **(WHEELCHAIR)**
8. Need for medication during school hours **(MEDICATION)**
9. Needs medical or quasi medical procedures during school hours **(NURSING CARE)**
10. Needs to be monitored during the day due to poor health or a medical condition **(HEALTH)**

Set Two: Placement History

1. Number of years the child has spent in a special education classroom setting **(YEARS IN SPECIAL CLASS)**
2. The amount of time the child has previously spent in a general education classroom **(INCLUSION HISTORY)**

Set Three: Parent Characteristics

1. Relationship to the child **(RELATIONSHIP)**
2. The relative importance that the parent places on socialization as an educational goal **(VALUES SOCIALIZATION)**
3. Knowledge or awareness of inclusion programs **(KNOWLEDGE)**
4. Level of education **(EDUCATION)**
5. Ethnicity **(ETHNICITY)**

DEPENDENT VARIABLES: Parent perceptions of:

1. The impact of increased inclusion on the quality of the educational services that the child receives as measured by a factor score on the Parent Attitudes Toward Inclusion Scale **(QUALITY OF EDUCATIONAL SERVICES)**
2. The impact of increased inclusion on mutual social and educational benefits to both the child with severe disabilities and to general education students in the class where the inclusion takes place as measured by a factor score on the Parent Attitudes Toward Inclusion Scale **(MUTUAL BENEFITS)**
3. The impact of increased inclusion on acceptance and treatment of the child with severe disabilities as measured by a factor score on the Parent Attitudes Toward Inclusion Scale **(ACCEPTANCE AND TREATMENT)**
4. The efficacy of the full inclusion model for children with severe disabilities in general **(FULL INCLUSION IN GENERAL)**
5. The efficacy of the full inclusion model for the parent's own child **(FULL INCLUSION FOR OWN CHILD)**

a All information was gathered through the use of individual question items on the Integration Survey unless otherwise noted

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TABLE 4

Question Items, Means, and Standard Deviations Associated with PATI Scale Factors.

Factor 1: Impact of Inclusion on Quality of Educational Services on Parent's Own Child *(.80)* [a] *((M = 2.80 SD = 1.28))* [b]

If my child were to spend much of the day in a regular classroom, he/she would end up not getting all the necessary special services that would be provided in a special education classroom.

If my child were to spend a lot of time in a regular classroom, he/she would end up not getting the extra help he/she needs.

It is impossible to modify most lessons and materials in a regular classroom to truly meet the needs of my child.

A regular education classroom provides more meaningful opportunities for my child to learn than does a special education classroom.

Factor 2: Mutual Benefits of Inclusion *(.82) ((M = 4.01 SD = 1.16))*

The quality of a regular education student's education is enriched when a student with severe disabilities participates in his/her class.

When a student with severe disabilities is enrolled in a regular education classroom, the positive benefits to the regular education students out weigh any possible problems that this practice may present.

The more time my child spends in a regular classroom, the more likely it is that he/she will be treated kindly by the nondisabled students in that room.

The more time my child spends in a regular classroom, the more likely it is that the quality of his/her education will improve.

If my child were to spend much of his/her day in a regular education classroom, he/she would end up becoming friends with nondisabled students in that room.

Factor 3: Impact of Inclusion on Acceptance and Treatment *(.66) ((M = 3.62 SD = 1.32))*

The more time my child spends in a regular classroom, the more likely it is that he/she will be mistreated by other, nondisabled, students in that room.

The more time my child spends in a regular classroom, the more likely it is that he/she would end up feeling lonely or left out around the regular education students.

[a] *The number in parentheses represents the factor's coefficient alpha.*

[b] *The numbers in double parentheses represent the mean and standard deviation associated with the factor.*

Theoretical mean = 3.5. Negatively worded items were reversed scored so that positive perceptions were always reflected by higher mean scores.

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TABLE 5
Frequency of Parent Response to Description of Full Inclusion Model Program

Parent Ratings of Whether the Full Inclusion Model Described Would Be a "Good Idea" for Students with Severe Disabilities in General (M = 3.32[a] SD = 1.63)

	Percent of Total Sample
Strongly Disagree	15.9
Disagree	22.8
Disagree Slightly	14.1
Agree Slightly	18.7
Agree	15.9
Strongly Agree	12.0

Parent Ratings of Whether the Full Inclusion Model Described Would Be a "Good Idea" for Their Own Child with Significant Disabilities. (M = 3.22[a] SD = 1.82)

	Percent of Total Sample
Strongly Disagree	25.2
Disagree	19.8
Disagree Slightly	9.1
Agree Slightly	12.8
Agree	17.4
Strongly Agree	14.8

[a] Theoretical mean = 3.5. Negatively worded items were reversed scored so that positive attitudes are always reflected by higher mean scores.

TABLE 6
IMPACT OF INCLUSION ON QUALITY OF EDUCATIONAL SERVICES (QUALITY OF EDUCATIONAL SERVICES FACTOR)

SET	R2	DELTA R2	F	DF	PROB
CHILD CHAR.	.13		6.12	11,448	<.001
PLACEMENT HISTORY	.18	.05	13.59	2,446	<.001
PARENT CHAR.	25	.07	8.60	5,441	<.001

IMPACT OF INCLUSION ON ACCEPTANCE AND TREATMENT OF THE CHILD WITH SIGNIFICANT COGNITIVE DELAY **(ACCEPTANCE AND TREATMENT FACTOR)**

SET	R2	DELTA R2	F	DF	PROB
CHILD CHAR.	.06		2.58	11,448	<.005
PLACEMENT HISTORY	.06	.005	1.21	2,446	>.05
PARENT CHAR.	.12	.06	5.80	5,441	<.001

TABLE 6 Continued next page

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IMPACT OF INCLUSION ON MUTUAL BENEFITS TO BOTH GENERAL EDUCATION STUDENTS AND THE CHILD WITH SIGNIFICANT COGNITIVE DELAY (**MUTUAL BENEFITS FACTOR**)

SET	R2	DELTA R2	F	DF	PROB
CHILD CHAR.	.13		6.12	11,448	<.001
PLACEMENT HISTORY	.17	.04	11.70	2.446	<.001
PARENT CHAR.	.22	.05	5.98	5,441	<.001

PARENT PERCEPTIONS REGARDING THE EFFICACY OF THE FULL INCLUSION MODEL FOR STUDENTS WITH SEVERE DISABILITIES IN GENERAL (**FULL INCLUSION IN GENERAL QUESTION**)

SET	R2	DELTA R2	F	DF	PROB
CHILD CHAR.	.06		2.60	11,448	<.005
PLACEMENT HISTORY	.10	.04	10.60	2,446	<.001
PARENT CHAR.	.18	.07*	7.89	5,441	<.001

PARENT PERCEPTIONS REGARDING THE EFFICACY OF THE FULL INCLUSION MODEL FOR THEIR OWN CHILD (**FULL INCLUSION FOR OWN CHILD QUESTION**)

SET	R2	DELTA R2	F	DF	PROB
CHILD CHAR.	.18		9.17	11,448	<.001
PLACEMENT HISTORY	.24	.06	16.80	2,446	<.001
PARENT CHAR.	.30	.06*	8.0	5,441	<.001

*Discrepancy due to rounding error.

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Figure 1
Description of Full Inclusion Model Program Contained in the Integration Survey

These days, most students with severe disabilities are taught in a special education classroom grouped with children who have similar needs. Some of these students attend school outside of their neighborhoods in order to be in these special classrooms. Some of these students are mainstreamed into regular classes at that school for part of the day.

Now there are a few schools that are trying a new way of educating these students. In these schools, students with severe disabilities are placed in a regular education classroom in their neighborhood school with nondisabled students and they stay there all day. There is usually only one students with severe disabilities in any one regular education classroom and not more than two or three students with severe disabilities enrolled at any one school. These students do not spend any time in a special education classroom with other students with disabilities. Instead, a special education teacher and other adults who work at the school help the teacher in the regular class to make the materials and lessons more understandable and useful for the students with severe disabilities. Support services, such as language therapy and adaptive PE training, are offered within the regular program to those students who need them. At some of these schools, even the most severely handicapped students participate in the regular education classroom in this way.

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TABLE 7
An Analysis of the Significance of the Individual Variables Contained within Three Individual Variable Sets on Five Dependent Variable Areas

	QUALITY OF EDUCATION*	ACCEPTANCE AND TREATMENT	MUTUAL BENEFITS	FULL INCLUSION IN GENERAL	FULL IN CLUSION FOR OWN CHILD
SET 1: CHILD VARIABLES					
COGNITIVE (Higher)	0.0752 (.01)		0.0766 (.02)		0.0310 (.002)
BEHAVIOR PROBLEMS (Fewer)	0.1262 (.05)	0.0899 (.01)	0.2158 (.004)		0.0439 (.05)
HEALTH (No problems)		0.9497 (.008)			
WALK (is able to)					0.3333 (.04)
SET 2 : PLACEMENT HISTORY					
INCLUSION HISTORY (More)			0.2983 (.003)	0.0608 (.03)	0.0643 (.03)
YEARS IN SPECIAL CLASS (More)	-0.2552 (.005)			-0.0673 (.02)	-0.1099 (.0004)
SET 3: PARENT VARIABLES					
VALUES SOCIALIZATION (More)	0.7277 (.0001)	0.1512 (.04)	07206 (.0001)	.01795 (.001)	0.2369 (.0001)
WHITE (Is)	-1.2872 (.006)	0.9003 (.0005)		-0.5228 (.0008)	-0.4595 (.004)
EDUCATION (More)		0.18514 (.02)		-0.0984 (.04)	

* Higher scores on dependent variable measures are always associated with more positive perceptions. The reader is referred to Table 3 for descriptions for the variables listed.

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tional or theoretical construct related to the research question and then entering these sets cumulatively into a regression model in a predetermined hierarchical order (see Table 3 for a listing of study independent variables in their respective sets categories) . Upon the addition of each new set of variables, an r-square, which is equivalent to a squared multiple semipartial correlation coefficient, is obtained and analyzed to determine if the addition of the new set contributes significantly to explaining the variance associated with the dependent variable after accounting for the variance already explained by the preceding sets. If the incremental r-square is significant as determined by the use of an F statistic, the individual variables within each significant set are tested for significance by means of a standard t-test. If the incremental r-square for an added set is not significant, no further significance testing is be conducted on the individual items within that set.

A hierarchical setwise procedure was chosen over more traditional stepwise procedures for the primary data analysis method in part due to its statistical effectiveness. According to Cohen and Cohen (1983), when the number of independent variable sets is typically small, the study Type I error rate is reduced significantly over what could be expected if one were to test for the significance of each of the variables included in the sets individually by the requirement that the respective set's F statistic meet a certain level of significance before individual significance is even considered. Further, by controlling the level of Type I errors, both the F and t-tests are relatively powerful and both Type 1 and Type 2 errors are kept in good balance.

Rationale for the Hierarchical Ordering of Sets

The independent variable sets were entered into the regression model in the order of their hypothesized effects on parent perceptions. *Child Characteristics* was the first entered since this set measures attributes such the degree or severity of cognitive deficit and the presence of health, behavioral, or medical conditions which have acted to originally limit the child's opportunity to participate in a general education classroom environment. This set is considered of primary importance since the variables contained within are viewed as the antecedent situation factors that created the need for a parent to initially consider the issue of integration options and to eventually form an opinion.

The *Placement History* set was entered second in the model. These variables deal with the child's school program and integration history and are thought to be subordinate in causal primacy related to perceptions in that program placement and level of integration are largely determined only after considering the characteristics of the child.

The set entered last contained the *Parent Characteristic* variables. These variables are considered to be most distal from the primary causal link to parent perceptions since they are mostly demographic or conceptual in nature as opposed to the variables contained in the first two sets which again are more situational or immediate. Further, items in this set relating to the value the parent places on socialization, and to knowledge or awareness of integration programs, can logically be thought to influenced by, or moderately related to, the variables contained in the first two sets.

Results

Analysis of the Hierarchical Setwise Procedure

Table 6 displays the results of the setwise regression procedure discussed above for each dependent variable category. The first column of the table identifies the sets being considered in their order of entry. The second column lists the r-square values associated with the addition of each set. The third through fifth columns identify the incremental change in the r-square value associated with the addition of the respective sets into the regression model and gives probability values associated with each of the increments. The incremental increases in r-square were tested for significance through the use of a general F test.

From Table 6, it can be seen that all incremental increases in r-squares were signifi-

cant at a minimum of a .05 level of probability with only one exception: the addition of the *Placement History* Set on the *Acceptance and Treatment* construct. It is also noted that the significance level reaches .001 on thirteen of the fifteen regressions. The general conclusion from this information is that all three sets of independent variables contribute to predicting parent perceptions regarding the impact of inclusive practices on *Quality of Educational Services* and *Mutual Benefits* as well as perceptions of the efficacy of *Full Inclusion in General* and in the specific (*Full Inclusion for Own Child*). The two sets involving *Child Characteristics* and *Parent Characteristics* are found to be important predicators of parent perceptions of the impact of inclusive practices on *Acceptance and Treatment* of their child. Further, the fact that the *Placement History* and *Parent Characteristics* sets added a significant amount to variance explained even after controlling for the variance associated with the antecedent *Child Characteristics* set on all but one of the regressions attests to the strength of their predictive ability and indicates that these secondary sets do in fact contain unique components beyond that which can be attributed to the hypothesized primary causal characteristics of the child in question.

Although all final models associated with the five dependent variable areas were associated with significant r-square values, the three independent variable sets are most effective in explaining the variance associated with parent perceptions of the efficacy of the full inclusion model for their own child (*Full Inclusion for Own Child*: $R^2 = .30$) and perceptions regarding the impact of inclusion on the *Quality of Educational Services* their child receives ($R^2 = .25$). This may be interpreted as indicating that parent responses to these dependent variable areas were more decisive or more extreme due to the perceived importance of the issues. It may also be that predictor variables which would have added strength to the model with regard to the remaining three dependent variable areas were left out of the regression model. These variables may have included such items as general perceptions regarding the efficacy of the public school system or parent assessment of the social nature of most general education students.

In regard to the two items measuring support for full inclusion, it can also be seen that the three independent variable sets account for significantly more variance in regard to the *Full Inclusion for Own Child* variable than the *Full Inclusion in General* variable. This is not surprising in that parent reactions to the later construct are likely based on philosophical reasoning while reactions to the first construct address a personal reality and therefore presumably coming from a more invested and considered position.

Analysis of Individual Items Contained within Sets

Table 7 presents the results of the protected t-test procedure. Specifically, the table identifies individual variables within the retained sets which significantly predict parent perceptions regarding the five inclusion constructs used as dependent variables. Because all three independent variable sets were found to explain a significant amount of variance at each step of the hierarchical setwise procedure for four of the dependent variables, all individual variables contained within these sets were tested for significance under each of these dependent variable categories. However, due to the inability of the *Placement History* Set to contribute significantly to explaining the *Acceptance and Treatment* dimension, only the independent variables associated with the *Child Characteristics* and *Parent Characteristics* Sets were further tested for significant in relation to this area.

The significance test involved an analysis of the partial, or unique, contribution of each variable while controlling for the contribution, or shared variance, of every other variable contained in all three sets. There were eighteen variables contained in the three independent variable sets collectively, therefore the significance of each individual variable was assessed only after controlling for its shared variance with seventeen other items.

The first column of Table 7 lists the individual variables contained under each set which reached a significance level of .05 or

greater in relation to any one of the five dependent variable areas. Included in parentheses under each independent variable listed is information on how to interpret a higher score on that variable. For example, a higher score on *Cognitive* means that the child displays relatively higher cognitive skills while a high score on *Walk* means that the child is able to walk.

The variables contained within each set that are not listed in the first column of the table may have added to the total r-square for each dependent variable category; however, the inability of these items to significantly add a unique predictive component to the dependent variable areas will exclude them from further individual interpretation.

The next five columns identify which variables within each independent variable set account for a significant amount of unique variance associated with perceptions of the five inclusion constructs. The raw score regression weights associated with each of the significant predictor variables are also given so that the reader may interpret the directionality of the findings. For example, by scanning the first column, it can be seen that child attributes such as higher *Cognitive* functioning and fewer *Behavior Problems* are related to more positive perceptions of the impact of inclusive practices on the *Quality of Education* their child receives. Further consideration of this column reveals that being a parent who *Values Socialization* more is similarly related to positive perceptions while having a child that has spent more *Years in Special Class* and being a parent who is *White* is associated with more negative perceptions of the impact of inclusion on the child's *Quality of Education*. Specific probability levels associated with each of the significant predictor variables are also included in parenthesis under the raw score regression weights.

Considering the table for summary conclusions, it can be seen that one variable, *Values Socialization*, emerges as a significant predictor of perceptions under all five inclusion constructs while another variable, *Behavior Problems*, is found significant under four of the five constructs. It is also noted that the variables, *Cognitive* skills, *Inclusion History*, and the number of *Years in Special Class* significantly predict perceptions under three of the five inclusion constructs. The frequent emergence of these variables attest to their importance in influencing parent perceptions.

A further examination of Table 7 shows that in many instances the predictor variables that emerge as significant differ according to the inclusion construct being considered. For example, with regard to the first three constructs, parent perceptions of the impact of inclusion on their child's *Quality of Education* as well on *Mutual Benefits* to both their own child and general education students are significantly related to the *Cognitive* functioning level and *Behavior* characteristics of their child, as well as to whether the parent *Values Socialization* as an education goal. However, while parent perceptions of the impact of inclusion on *Acceptance and Treatment* of their children are similarly predicted by the presence of *Behavior Problems* and whether the parent *Values Socialization*, these perceptions are unrelated to their child's *Cognitive* skills. Further differential effects relating to the first three inclusion constructs include the unique emergence of the child's *Health* and the parent's *Education* level as significant predictors of parent's perceptions of the impact of inclusion on *Acceptance and Treatment* of their child and the unique emergence of *Years in Special Class* and *Inclusion History* as significant predictors of perceptions regarding *Quality of Education* and *Mutual Benefits* respectively.

Considering the *Full Inclusion in General* and *Full Inclusion for Own Child* constructs, it appears that the variables *Years in Special Class*, *Inclusion History*, *Values Socialization*, and *White* significantly predict perceptions towards both concepts. However, child characteristics such as *Cognitive* functioning, *Behavior Problems*, and the ability to *Walk* are significantly related to perceptions only with regard to the efficacy of the *Full Inclusion for Own Child* variable.

It is interesting to note that a change in directionality occurs for two of the emerging predictor variables depending on the inclusion construct considered. Being *White* is associated with negative perceptions regarding the

Quality of Education, *Full Inclusion in General*, and *Full Inclusion for Own Child* variables and positive perceptions regarding *Acceptance and Treatment*. Having more *Education* is similarly associated with the *Acceptance and Treatment* and *Full Inclusion in General* variables.

Discussion

Differences Along the Continuum: Individual Differences and Parent Perceptions

Findings confirming the existence of differential influences on perceptions suggest that parents' views regarding inclusive practices are unlikely to be similar simply on the basis of such overt conditions as the disabling condition of their child. Rather, views are likely to be differentially influenced by the individual characteristics and perceived needs of the child and parent in question, and by such factors as the child's placement history. Views can also be expected to differ according to an evaluation of the impact of inclusive practices on specific dimensions of the child's educational program, rather than an evaluation of general merits of such programs.

The complexity of the multidimensional nature of parent perceptions of inclusive practices makes any generalization regarding parent preferences difficult. However, a consideration of the emergent significant predictors of perceptions in the current study may further our rudimentary understanding of the dynamics of parent choice regarding inclusion and individual characteristics.

For example, the significant relationship found between the increased value a parent places on socialization as an educational goal and positive perceptions regarding inclusive practices may offer an insight into reasoning used by parents when considering the efficacy of general versus special class placement. When a parent places a relatively higher value on the school's role in developing social skills over offering a specialized curriculum, perceptual shifts may begin to occur. In relation to perceptions regarding the impact of integration on the quality of educational services, these parents would understandably be less concerned with the ability of the general education teacher to modify the curriculum, availability of ancillary services, and the possibility of receiving more individualized instruction. Parents who place a higher value on socialization may be willing to trade off these "special education" benefits for the social benefits that they consider to be more accessible in a general classroom (Palmer et al., 1998).

Conversely, parents who place a higher value on the schools' role in teaching a specialized curriculum over the development of social areas may be more apprehensive about having their child spend time in the general education classroom, and about the efficacy of inclusive practices, since this type of placement may not be seen as conducive to the parent's preferences regarding curricular focus. The special day class may be viewed as an environment better able to provide the conditions necessary to develop and nurture such nonacademic goals as the attainment of functional and independence skills. Alternatively, it may be that the individualized attention and *shelter* afforded by a special day class environment is what leads these parents to prefer these settings. This possibility is supported by the study finding that parents whose children display more significant cognitive disabilities, as well as more behavior problems and more need for specialized services, tend to hold more negative perceptions of inclusive practices. These parents may see their more involved children as "fragile," or in need of special handling and intensive services, which they may believe is less likely to be offered in a general class setting.

Limitations

While consideration of the three sets of independent variables used in this study explained a significant portion of the variance associated with parent perceptions of inclusive practices, it is true that most of this variance still remains unaccounted for. Variables which may have strengthened the current model might include enigmatic constructs involving personality characteristics, biases regarding the general state of education, or beliefs regarding the competency of the average general education classroom teacher. Future studies which help to tease out these illu-

sive variables would be useful in further illuminating the complex multidimensional dynamics involved in parent attitudes toward inclusion.

A limitation of this study involves the limited number of surveys analyzed. While a large sample size and adequate representation of parents from varying ethnic and educational backgrounds support the validity of the study findings, the limited participation in relation to the initial population contacted affects the generalizability of the findings somewhat. Unexplored characteristics of the parents who chose not to participate in the study may have differentially influenced outcomes. Yet, it may also be true that the limited return rate may have created a net positive effect. By only considering perceptions of those parents who elected to participate without the coercion of follow up solicitation, the results presumably reflect the views of those most likely to express, and possibly impose, their views regarding effective placement options. It is these parents that will influence policies regarding inclusion.

Conclusion

It is interesting to note that while the inclusion movement now appears to be led by those who are primarily advocating for students with severe disabilities (Fuchs & Fuchs, 1994), current findings demonstrate that the parents of these students who are likely to hold more positive perceptions of inclusive practices tend to be those whose children display relatively higher cognitive skills, fewer behavior problems, and fewer characteristics requiring specialized school services. This suggests that the inclusion position may be primarily representative of the views of only a cross section of the supposed constituents of the movement whose children are relatively higher functioning, while largely unrepresentative of the views of parents whose children display the most severe forms of disability.

Information regarding the existence of multidimensional influences of perceptions of inclusive practices underscores the need for school psychologists to encourage family input when considering inclusive placements for their children. Data gathered through this study shows that the efficacy of any placement model can not be determined without a consideration of the complex dynamics involved in the interplay between individual child characteristics, the perceived role of the school, and parent and family values. Study findings further imply that any full scale move toward one model of integration, as suggested by some, would meet resistance from many of the families involved. The findings of this study instead argue for the maintenance, and continued extension, of the current continuum of placement options available to address the diversity of perceptions regarding the efficacy of inclusive practices.

References

Anotonak, R. F. & Larrivee, B. (1995). Psychometric analysis and revision of the opinions relative to mainstreaming scal *Exceptional Children, 62,* 139-149.

Arias, M., To, E., & Takagi, N. (1983). Validation of the client developmental evaluation record. In T. Ford, A.B. Silverstein, & A.L. Fluharty (Eds.) *Pacific state archives VII.* University of California at Los Angeles. (Available from Lanterman Research Group, PO Box 100-R, Pomona, CA. 91769)

Borthwick-Duffy, S., Eyman, R., & White, J. (1987). Client characteristics and residential placement patterns. *American Journal of Mental Deficiency, 92,* 24-30.

Borthwick-Duffy, S. A., Palmer, D. S., & Lane, K. L. (1996). One size doesn't fit all: Full inclusion and individual differences. *Journal of Behavioral Education, 6,* 311-329.

California State Department of Developmental Services. (1978). *Client Developmental Evaluation Report.* Sacramento: California State Department of Developmental Services.

Cohen, J. & Cohen, P. (1983). *Applied multiple regression/correlation analysis for the behavioral sciences.* New Jersey: Lawrence Erlbaum Associates.

Dillman, D. (1978). *Mail and telephone surveys: The total design method.* New York: Wiley-Interscience.

Donnellan, A. & Miranda, P. (1984). Issues related to professional involvement with families of individuals with autism and other severe handicaps. *The Journal of the Association for Persons with Severe Handicaps, 9,* 16-25.

Downing, J. E., Eichinger, J., & Williams, L. J. (1997). Inclusive education for students with severe disabilities. *Remedial and Special Education, 18,* 133-142.

Erwin, E. J. & Soodak, L. C. (1995). I never knew I could stand up to the system: Families' perspectives on pursuing inclusive education. *The Journal of the Association for Persons with Severe Handicaps, 20,* 136-146.

Ferrara, D. (1979). Attitudes of parents of mentally retarded children toward normalization activities. *American Journal of Mental Deficiency, 84,* 145-151.

BEST COPY AVAILABLE

Fuchs, D. & Fuchs, L. (1994). Inclusive schools movement and the radicalization of special education reform. *Exceptional Children, 60,* 294 - 306.

Giangreco, M., Cloninger, P., Mueller, S., Yang & Ashworth, S. (1991). Perspectives of parents whose children have dual sensory impairments. *The Journal of the Association for Persons with Severe Handicaps, 16,* 14-24.

Green, S. K. & Shinn, M. R. (1994). Parent attitudes about education and reintegration: What is the role of student outcomes? *Exceptional Children, 16,* 269-281.

Guralnick, M., Conner, R., & Hammond, M. (1995). Parent perspectives of peer relationships in integrated and specialized programs. *American Journal on Mental Retardation, 99,* 457-476.

Hamre-Nietupski, S., Nietupski, J., & Strathe, M. (1992). Functional life skills, academic skills, and friendship/social/relationship development: What do parents of students with moderate/severe/profound disabilities value? *The Journal of the Association for Persons with Severe Handicaps, 17,* 53-58.

Harris, C. Eyman, R.K., & Mayeda, T. (1982). *An interrater reliability study of the Client Developmental Evaluation Report (Final Report).* Sacramento: California Department of Developmental Services.

Hayes, K., & Gunn, P. (1988). Attitudes of parents and teachers toward mainstreaming. *The Exceptional Child, 35,* 31 - 39.

Hunt, P. & Goetz, L. (1997) Research on inclusive educational programs, practices, and outcomes for students with severe disabilities. *The Journal of Special Education, 31,* 3-29.

Katsiyannis, A., Conderman, G., & Franks, D. J. (1995). State practices on inclusion: A national review. *Remedial and Special Education, 16,* 279-287.

Kaufman, J. M. & Hallahan, D. P. (Eds.). (1995). *The illusion of full inclusion.* Austin, TX: Pro.Ed.

Larrivee, B. & Cook, L. (1979). Mainstreaming: A study of the variables affecting teacher attitude. *The Journal of Special Education, 13,* 315 - 324.

Larson, S. & Lakin, C. (1991). Parent attitudes about residential placement before and after deinstitutionalization: A research synthesis. *The Journal of the Association for Persons with Severe Handicaps, 16,* 25-38.

Lipski, D.K. (1989). The role of parents. In D.K. Lipski & A. Gartner (Eds.), *Beyond separate education: Quality education for all* (pp. 255-290). Balitmore: Paul H. Brookes.

Lipsky, D., & Gartner, A. (1994). Inclusion: What it is, what it's not, and why it matters. *Exceptional Parent, 10,* 36 - 38.

Lowenbraun, S.M. and Affleck, J. (1990). Parental satisfaction with integrated class placements of special education and general education students. *Remedial and Special Education, 11,* 37-40.

McDonnell, J. (1987). The integration of students with severe handicaps into regular public schools: An analysis of parent perceptions of potential outcomes. *Education and Training in Mental Retardation, June,* 98-111.

Murray, J. (1990). Best practices in working with parents of handicapped children. In A. Thomas & J. Grimes (Eds.), *Best Practices in School Psychology II* (pp. 823-836). Washington, D.C.: The National Association of School Psychologists.

Mlynek, S., Hannah, E., & Hamlin, M. (1982). Mainstreaming: Parental perceptions. *Psychology in the Schools, 19,* 354-359.

Nietupski, J., & Hamre-Nietupski, S. (1987). An ecological approach to curriculum development. In L. Goetz, D. Guess, & K. Stremel-Campbell (Eds.), *Innovative program design for students with dual sensory impairments* (pp. 225-253). Baltimore: Paul H. Brookes.

Nihira, K. (1978). Factorial descriptions of the AAMD adaptive behavior scale. In W. A. Coulter & H. W. Morrow (Eds.), *Adaptive behavior.* (45-57). New York: Grune & Stratton,

Noel, M. M. (1984). Securing integrated services: Four histories. In N. Certo, N. Haring, & R. York (Eds.) *Public school integration of severely handicapped students: Rationale, issues, and progressive alternatives* (pp. 43-64). Baltimore: Paul H. Brookes.

Palmer, D. S., Borthwick-Duffy, S. A., & Widaman, K. (1998). Parent Perceptions of Inclusive Practices for their Children with Significant Cognitive Disabilities. *Exceptional Children, 64,* 271-282.

Ryndak, D. L., Downing, J. E., Jacqueline, L. R., & Morrison, A. P. (1995). Parents' perceptions after inclusion of their children with moderate or severe disabilities. *Journal of the Association for Persons with Severe Handicaps, 20,* 147-157.

Ryndak, D. L., Downing, J. E., Morrison, A. P., & Williams, L. J. (1996). Parents' perceptions of educational settings and services for children with moderate or severe disabilities. *Remedial and Special Education, 17,* 106-118.

Sailor, W. (1991). Community school: An essay. In L.H. Meyer, C. Peck & L. Brown (Eds.), *Critical issues in the lives of people with severe disabilities* (pp. 379 - 385). Baltimore: Paul H. Brooks.

Sawyer, R., McLaughlin, M., & Winglee, M. (1994). Is integration of students with disabilities happening? An analysis of national data trends over time. *Remedial and Special Education, 15,* 204-215.

Schafer, W. (1991). Reporting hierarchical regression results. *Measurement and Evaluation in Counseling and Development, 24,* 98 - 100.

Schmelkin, L. P. (1981). Teachers' and nonteachers' attitudes toward mainstreaming. *Exceptional Children, 48,* 42-47.

Semmel, M.I, Abernathy, T.V., Butera, G., & Lesar, S. (1991). Teacher perceptions of the Regular Education Initiative. *Exceptional Children, 57,* 9-23.

Shanker, A. (1994). Inclusion and ideology. *Exceptional Parent, 24,* 39 - 40.

Siegel, L. (1994). *Least restrictive environment: The paradox of inclusion.* Horsham, Pennsylvania: LRP Publications.

Stetson, F. (1984). Critical factors that facilitate integration: A theory of administrative responsibility. In N. Certo, N. Haring, & R. York (Eds.), *Public school integration of severely handicapped students: Rationale, issues, and progressive alternatives.* (pp. 65-82). Baltimore: Paul H. Brookes.

BEST COPY AVAILABLE

Tausig, M. (1989). Factors in family decision-making about placement for developmentally disabled individuals. *American Journal of Mental Deficiency, 89,* 352-361.

Thurman, K., & Fiorelli, J. (1979). Perspectives on normalization. *The Journal of Special Education, 13,* 339 - 346.

Turnbull, A., & Turnbull, H. (1990). *Families, professionals and exceptionality: A special partnership* (second edition). Columbus, OH: Merrill Publishing.

Widaman, K. F. (1984). *Interrater reliability of adaptive behavior assessments: Item and factor levels.* Paper presented at the annual meeting of the American Psychological Association, Toronto.

Widaman, K. F., Miller-Herringer, T., & Borthwick-Duffy, S. A. (1987). *A multitrait-multimethod study of dimensions of adaptive behavior: Comparison of the Client Development Evaluation Report, The Vineland Adaptive Behavior Scales, and semantic differential rating scales.* Paper presented at the annual Gatlinburg Conference on Mental Retardation, Gatlinburg, TN.

Widaman, K.F., Stacy, A., & Borthwick, S.A. (1985). *Multitrait-multimethod evaluation of adaptive and maladaptive behavior of mentally retarded persons.* Paper presented at the annual meeting of the American Association on Mental Deficiency, Philadelphia.

Wilczenski, F. L. (1992). Measuring attitudes toward inclusive education. *Psychology in the Schools, 29,* 306-312.

York, J., & Tundidor, M. (1995). Issues raised in the name of inclusion: Perspectives of educators, parents, and students. *Journal of the Association for Persons with Severe Handicaps, 20,* 31-44.

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CALIFORNIA'S TARGETED TRUANCY AND PUBLIC SAFETY PROGRAM: PRELIMINARY OUTCOMES ASSOCIATED WITH TWO SCHOOL DISTRICTS' TRUANCY ABATEMENT EFFORTS

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Abstract: Although school attendance has been mandatory in California for nearly a century, school attendance rates have approached 90% only over the last few decades. Truancy has been a problem since the onset of mandatory education, and nonattendance has always been seen as harmful not only to individuals, but also to the greater society. Recently the Office of Juvenile Justice and Delinquency Prevention (U.S. Department of Justice), the California Board of Corrections, and the California Legislature have been focusing their attention on truancy as a risk factor, if not as a stepping stone, to criminal activity. Recently, California legislators created a new article in the California Education Code known as the Targeted Truancy and Public Safety Grant Program (TTPS). This paper evaluates truancy abatement efforts in two school districts: one funded through TTPS and the other through the California Board of Corrections

The American public and governmental policy makers have long been concerned about crime reduction. Recently the U.S. Department of Justice has focused on truancy as "a stepping stone to delinquency and criminal activity" (Garry, 1996), and therefore has examined ways to reduce truancy. The California State legislature reacted to this focus by creating a new article in the California Education Code entitled "Targeted Truancy and Public Safety Grant Program" (TTPS; sections 48700-48740). This article earmarks money for implementing interventions for youths 15-years old or younger who are truant and considered to be at risk for committing crime (e.g., are under probation supervision, and have experienced poor school behavior or performance, family problems, substance abuse, stealing, incorrigibility, or gang membership/association).

Once "high-risk" truant youths are identified, they, as well as their families, are to be provided with interventions that fit their particular needs. The focus is on making the youth and their families accountable for the youth's delinquent behavior, developing strategies for the youth to attain and maintain academic success, and to help the youth develop and increase positive functioning within the community. This legislation requires school districts receiving money from this grant to have multiagency collaboration including the support of the chief probation officer within their county.

The present investigation examines two truancy programs being implemented in one California county, one funded by the California Department of Education TTPS Grant and the other funded by the California Board of Corrections, that seek to lower the incidence of truancy in these respective school districts. The two programs are identical in nature at the school level, but differ once individual youth are provided with tailored interventions. Therefore, only the macro-level interventions that the programs share will be discussed in the present study. However, before describing these truancy programs, an historical discussion of truancy in American and Californian schools will help to shed light on this area of concern.

Historical Overview of Truancy

Between 1852 and 1918, compulsory school attendance became the law of the land in response to three types of pressures (Levine, 1984): (a) a commitment to the education of all youth in the nation, (b) a concern over the issue of socializing the increasing population of immigrant children into the mainstream culture, and (c) a concern over the exploitation of child labor raised by advocates. At that time, schools were seen as the government agency that supported families in teaching their children the language, customs and skills

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necessary to work in an increasingly industrialized society. In California, free public education was established in 1866 when the *Revised School Law* was enacted (Unger, 1996). However, it wasn't until 1903 that education was made compulsory and children between the ages of 8 and 14 were required to attend (Chapter CCLXX, 35th Session of the California Legislature, March 24, 1903). In that same act, truancy and habitual truancy were defined exactly as they are to this day (current definition given below), and consequences for truants and non-compliant parents, similar to present consequences (e.g., fines and jail sentences), were also outlined.

As the need for more skilled labor has grown throughout this century, the pressure for youths to attend high school for four years and gain skills to be successful in college have grown greatly as well. Currently in California, all people[1] from 6 through 17 years of age are subject to compulsory education (California Education Code; section 48200). In high school, the minimum school day is set at 240 minutes. However, there are many complicated exceptions to this standard that include combinations of educational settings such as occupational centers and continuation schools. For example, a student between ages 16 and 18 may enter a continuation school where he or she is only required to attend four 60-minute classes a week (240 minutes a week).

Compulsory education laws were enacted in California to benefit students, their families, and greater society, but there has rarely been uniform and consistent compliance with these laws. Even as early as 1905 in Los Angeles, educators were already organizing special classes for persistent male truants (Wallin, 1938). Indeed, the original 1903 legislation mandating school attendance provided guidelines for "parental schools" where truants could be detained and educated with the parents' consent. Wallin (1938) relates how one truancy reduction program was dedicated to the notion that "no boy should fail, be suspended, or be expelled"(p. 4). He reports that "two years later, the truancy cases in juvenile court had practically disappeared— the number did not exceed three a year— while the average attendance during the period of seven years was 99 percent" (p. 4).

Wallin (1938) didn't mention the population of students enrolled, nor the population of youths who weren't enrolled in school, but the idea of truancy reduction is obviously not new. Taking a look at long-term trends, the percentage of people graduating from high school has increased over the course of this century. For example, in 1940 more than 60% of all persons ages 25 to 29 years old had not completed high school, but by 1980 that proportion had fallen to less than 16% (U.S. Census Bureau, 1985). The 1970 census reported that "nearly two million school-age children were not enrolled in any school during the three months prior to enumeration in April 1970" (Levine, 1984, p. 133).

What is Truancy?

At this point it is necessary to define truancy more precisely, and discuss how it relates to actual enrollment, actual attendance and "drop-outs" because these legal terms can be confusing. According to California Education Code section 48260(a):

> Any pupil subject to compulsory full-time education or to compulsory continuation education who is absent from school without a valid excuse three full days in one school year or tardy for more than any 30-minute period during the schoolday without a valid excuse on three occasions in one school year, or any combination thereof, is a *truant* and shall be reported to the attendance supervisor or to the superintendent of the school district.

In the California Education Code, student excused absences are considered valid only if they are:

> (1) due to his or her illness,
> (2) due to quarantine under the direction of a county or city health officer,
> (3) for the purpose of having medical, dental, optometrical, or chiropractic services rendered,
> (4) for the purpose of attending the funeral services of a member of his or her immediate family, so long as the absence is not more than one day if the service is conducted in California and not more than three days if the service is conducted outside California, or
> (5) for the purpose of jury duty in the manner provided for by law. [California Education Code section 46010(b)].

If a pupil is once reported as a truant and is later absent from school without a valid ex-

cuse one or more days, or tardy on one or more days, then he or she shall be reported again as a *truant* to the attendance supervisor or to the superintendent of the district (California Education Code, section 48261). This redundancy in reporting relates to the definition for a *habitual truant* in the California Education Code, which is as follows (section 48262):

> Any pupil is deemed an *habitual truant* who has been reported as a truant three or more times per school year, provided that no pupil shall be deemed as an habitual truant unless an appropriate district officer or employee has made a conscientious effort to hold at least one conference with a parent or guardian of the pupil and the pupil him/her/self, after the filing of either of the reports required by Section 48260 or Section 48261.

Once deemed an habitual truant, the probation department and the district attorney's (D.A.) office may be notified of this youth's name and truant behavior. The D.A. or probation officer (assigned the case) can request the youth and the youth's parent or guardian to attend a meeting in order to discuss the legal consequences of the youth's truancy. At the point of being deemed an habitual truant, if the probation officer, or D.A. after consulting with the probation officer, decide that available community resources cannot resolve the truancy problem, or if the youth, or the youth's parents or guardians, or both, fail to respond to services provided or to the directives of the school, the probation officer, or the D.A., then the D.A. or probation officer may file a petition pursuant to section 601. Therefore, as an habitual and "unresponsive" truant, the youth could become a 601 ward of the court under the *Welfare and Institutions Code*.

Under the above definitions of a truant student, a "dropout" is technically a truant, but not a habitual truant unless his or her parents have been appropriately notified. Because this investigation focuses on the *Targeted Truancy and Public Safety Program* as defined by California legislature in the California Education Code (section 48700), the lengthy California government codes cited above will be used for attendance data in this investigation, but are not necessarily the same definitions used in all other states, nor in other investigations mentioned here.

A word of caution should be made. When examining attendance data, rates of truancy are not accurate because "dropouts" or other youths who never entered school are not counted in total number of youths who should be in school within a given attendance area. For example, in California, a 1976 survey (Office of Education, U.S. Department of Health, Education and Welfare, 1976) of households revealed that, while less than 1% of 13-year-olds were not attending school, nearly 13.6% of 14-year-olds were not in school. There is a group of youths not "on the books" anywhere who should be attending school. If there are many such youths, then truancy rates are underreported.

On a similar note, a school district might only take role once a day and count that attendance figure as the actual attendance for that day. However, students may cut class before and after that official role is taken so that "official" attendance data could show students at school, implying "full-day attendance," when they really aren't attending the whole day. Researchers and school personnel can only investigate information that is accessible, but caution should be taken when examining and evaluating truancy rates. Despite the fine points, the goal remains to get all students to be at their desks in school each day.

Incidence and Consequence of Truancy

Prevalence estimates for various school districts indicate that from 10% to 19% of school children are absent on any given day (Sommer, 1985a; Tuck & Shimburi, 1988). In California, a survey in 1978 (California Legislature, 1979) reported nonattendance at 9% in elementary school, 12% in junior high school, and 19% in high school. More recently, the Los Angeles Unified School District, the second largest public school district in the nation, reported that an average of 62,000 students (or 10% of its enrollment) is out of school each day (Shuster, 1995). As we can see in these reports, the number of non-attending students seem rather large, but are far less than as recently as the 1950s.

As discussed previously, some reasons for absence from school are accepted and so the absences are "excused," while other reasons for

absence, such as hanging out, playing games or merely sleeping, are not accepted and so the absences are not excused. Regardless of the reasons, though, regular attendance is a necessary condition for school learning. A student who is frequently absent is likely to fall so far behind his or her classmates that catching up becomes increasingly more difficult. Students who drop out of high school often have been "fading out" since elementary school (Schultz, 1987). This effect might be especially poignant for special education students who can only receive special services that they need at their school.

Schultz (1987) lists these correlates of truancy:

> 1. Truancy during elementary school is a strong predictor of truancy during high school.
> 2. There is a high correlation between truancy and deviant behavior during adolescence.
> 3. Of those who begin their truancy in elementary school and continued to be truant in high school, up to 75% fail to graduate.
> 4. As adults, truant students earn less money, exhibit more deviant behavior, and have more psychological problems than nontruants (p. 118).
>
> In addition, excessive absenteeism not only affects the truants themselves, but also the rest of the students attending school because school funding is based on average daily attendance in many states. In the New York City schools, for example, every percentage point of absenteeism translates into $10 to $20 million in lost aid; and in Dallas, each percentage point costs the district $1 million in state funding (Savoye, 1983).

Truancy Today

Recently, the California Department of Education has changed the calculation of "average daily attendance" (ADA) so that districts will no longer receive ADA funding for students with excused absences. Since July 1, 1998, excused absences are grouped together with unexcused absences and not counted when calculating district funding. This means that a student must be in their seat when official attendance is taken, in order for the district to receive ADA funding for that student. This will have important consequences for schools, their funding, and, consequently, for their attendance policies and truancy prevention programs. Schools with high unexcused absent rates have legal means (i.e., reporting to the D.A. or probation department and filing of 601 petition) for addressing this issue, but if a school has a high excused absent rate, it will lose money with no legal recourse. One consequence can be that a school might seek to "disprove" these "excuses" (especially in extreme cases), reclassifying the absences as unexcused, so that they might use established legal channels (SARB, probation, the district attorney) to bring the absent child back into school. This matter will be discussed further as it relates to the present truancy reduction program.

Truancy Reduction

As can be gleaned from the title of the new California legislation, *Targeted Truancy and Public Safety Program*, the impetus for this program focuses as much on the well-being of the individual truant as on "public safety." The reason is clear; if an adolescent isn't in school, he or she has more opportunity to commit a daytime crime. Truancy can be a "stepping stone" to delinquent and criminal activity, and truants are at risk of being drawn into behavior involving drugs, alcohol, or violence (Garry, 1996). For example, police departments report increased daytime crime rates that they say are due, at least in part, to students who commit crimes while being truant (Garry, 1996). As an illustration, shoplifting arrests fell 60% in Van Nuys, California, when police conducted a three-week truancy sweep (Garry, 1996). In an experimental study of the effect of truants and their families who received information and/or services from probation officers, those who received services were less likely to return to court for truancy (Stewart & Ray, 1984). Yet, these truants were just as likely as control group truants to return to the court for other criminal offenses. Stewart and Ray (1984) hypothesize that the recidivism rates were just starting to fall after three years of the program and that more time was needed to effect rates of recidivism.

One investigation of a birth cohort of 1,265 New Zealand youths (372 of which were classified as truant at one point from ages 11

to 16) reported that as truancy increased in severity, there were parallel increases in risks of juvenile offending, substance use behaviors, and mental health problems (Ferguson, Lynskey, & Horwood, 1995). Teenagers who showed severe and recurrent truant behavior were 3.3 to 14.8 times higher than teenagers who were not truant to have negative outcomes.

Truancy can be seen as a risk factor for negative outcomes, or, in other words, as a stepping stone of sorts to more antisocial activities. On the other hand, this is also a negative educational outcome in and of itself. Out-of-school youth miss the opportunity to learn valuable skills and information and experience positive social growth.

One risk factor for truant behavior is the inconsistent reporting and monitoring of unexcused absences by the school personnel. Levine, Metzendorf, and VanBoskirk (1986) state that school truancy policies often lack adequate reporting, recording, follow-up, or consistent enforcement of consequences. Those schools with more "open" policies of attendance tend to have higher rates of truancy, and students in those schools were reportedly more likely to believe that teachers and administrators did not care about them or their attendance. Other studies (Fiordaliso, Lordeman, Filipczak, & Friedman, 1977; Helm& Burkett, 1993) concluded that a plan of school-initiated contacts with parents of truant children was one way to significantly reduce absenteeism.

The *Office of Juvenile Justice and Delinquency Prevention* reviewed a number of current programs around the country (Garry, 1996). For example, a program in Oklahoma created a "truancy center" to where truant youth are brought, their parents are called, and the cases are processed through the coordination of the district attorney, the police, and school officials. In Kansas, there is an intensive 90-day program for youth whose parents consent to have their children enter it. In this program the youth's attendance is monitored on a daily basis, there is support and group therapy for the youth, and support and education services are provided for the youth's parents. A program in New Jersey seeks to consult and counsel families of children with 5 to 15 days of unexcused absences, where counselors try to coordinate school and community resources in order to increase the students' attendance. In Minnesota, there is a truancy reduction program that tracks unexcused absences, and refers truant youth to a "Youth Service Bureau" where they are given interventions or referred to the district attorney and receive education and intervention through the court. In 15 school districts in Arizona, there is a *Save Kids Partnership* that tracks truant youth and works with parents to discover and solve problems that are keeping the youth away from school. Here again, if these solutions are unsuccessful, the case is referred to the district attorney for education about the legal consequences and interventions that will be used if attendance doesn't improve. Lastly, in New Mexico, officials started a daytime curfew during school hours, where offenders eventually may be assigned to community service and parents might have to pay a fine of $100.00.

Purpose of the Study

For this investigation, interventions funded and/or initiated by the *Targeted Truancy Prevention and Safety Program*, occurring in two secondary school districts in the same county, will be examined. While this program includes specific interventions for some of the student population whose truant behavior is extreme (more than seven days of unexcused absences), this investigation focuses on the school and district levels, not the individual student level. Future reports will examine the impact of the program on specific students. This investigation describes the procedures that the schools and other government agencies use for monitoring, reporting, and following-up on unexcused absences, and evaluates how effective these general procedures have been in reducing unexcused absences and in increasing actual attendance during the first year of the program.

Method

The Targeted Truancy and Public Safety Program

The Targeted Truancy and Public Safety Program (TTPS) is a collaboration between the schools, the district attorney and other agencies, such as probation, law enforcement, and mental health, that offer service and consultation to high-risk truant youth and their families. This paper examines the first year of three-year programs in two districts, one project funded by the California Board of Corrections and the other funded by the California Department of Education. The district attorney announced the new programs to students' parents and guardians in a letter at the beginning of the 1997-98 school year, outlining parents and students obligation to ensure school attendance.

All schools in the county are required to closely monitor students' unexcused absences and follow an intervention plan for each student based on a multigate system. A student reaches the **Step 1** by accruing 18 periods (or the equivalent of three days) of unexcused absences. At this point, the school sends a letter to the parents informing them that the student is a legal truant. The letter also describes the legal consequences for the parent, as well as the student, if such truant behavior continues (see Appendix A, Letter #1).

If a student accrues 24 unexcused period absences, then the student has reached the **Step 2** and another letter is sent home to the parents or guardians of the student (see Appendix A, Letter #2). The letter reviews the main points of the previous letter and also mandates the parents/guardians and student attendance at an after-school meeting that includes other students who have reached the same step. At this general meeting, law enforcement, school officials, probation officers and the assistant district attorney outline the mandatory attendance law and its pertinence to the families. They talk about the negative outcomes (fines, probation, crime, and unemployment) associated with absenteeism, talk about some of the reasons for being absent (i.e., what is excused and what is not excused), and inform families about services offered to help with any problem (mental health, drugs, alcohol, etc.) that might be contributing to the unexcused absences.

If the student continues to accrue unexcused absences, the **Step 3** is reached with 36 unexcused period absences. At this step, another letter is sent out requesting a personal meeting with the parents/guardians, the student, and a school administrator (see Appendix A, Letter #3). At this meeting the school administrator tries to find out more specifically what is causing the student to be absent from so many periods without a valid excuse. The school administrator attempts any school-based interventions available to the student and reiterates the information that the parents/guardians and student have been getting through the letters and meetings.

If the student is absent without an excuse for one more day after this meeting with the administrator (a total of 42 unexcused period absences), then the student moves into **Step 4**, is considered a "habitual truant," and receives a letter requiring him or her to attend a *Truancy Mediation Team* (TMT) meeting with his or her parents/guardians (see Appendix, Letter #4). This meeting includes representatives from various agencies (e.g., mental health, family advocate, probation officer, school administrator, school psychologist, and an assistant district attorney). The parents/guardians and student are asked how the representatives can help to create an educational setting and/or provide services that will allow the student to attend school without unexcused absences. The team members brainstorm ideas along with the parent/guardian and student. These ideas are agreed upon and culminate into a contract that the child and parent/guardian sign with the D.A. School attendance without unexcused absences is always part of the contract.

If the student or parent/guardian is uncooperative, resistant, or continues to accrue unexcused absences, then the student and parents are referred to the county School Attendance Review Board (SARB) for prosecution. Prosecution might include restrictions in the youth's driving privileges or work privileges,

placing the youth on probation, and fines for the parents. This is the final step taken, **Step 5.**

Participating School Districts

Eleven secondary schools from two districts are included in this investigation. The enrollments for the five high schools in these two districts ranged from 1539 students to 3111 students, averaging 2046 students. The enrollments for the six junior high schools in these two districts ranged from 753 students to 1023 students, averaging 837 students.

Data Analyses

The percentages of excused, unexcused, and actual (students in their seats) attendance for each school are compared from Year 1 (before the program started) to Year 2 (the first year of the program). Although actual attendance ideally refers to students being in their seats the entire day, or at least for 240 minutes (the minimum school day), in this study one district reported that the students only had to be in their seats for one of the attendance "role calls" in one class to be considered as counting toward "actual attendance" on any given day.

Past studies indicate that actual attendance above 95% is rare (Levine, 1984; Savoye, 1983; Schultz, 1987; Shuster, 1995; Sommer, 1985b; Tuck & Shimburi, 1988). This might be due to inevitable illnesses or other life events (death of a family member, temporary transportation problems) that are beyond the control of the school. Since the schools in the current study already had actual attendance rates above 91%, increases greater than 4% were not likely. The changes in attendance rates, in spite of small gains in percentage points, will be statistically analyzed for significant change. More specifically, Stuart's test of correlated proportions is used to test the significance of attendance rate changes in excused, unexcused and actual attendance. This test can be used to examine the differences in the marginal distribution of attendance between excused, unexcused and actual attendance (Zwick, Neuhoff, Marascuilo, & Levin, 1982). With this test, it is possible to see if the changes in attendance between Year 1 and Year 2 are large enough to be considered statistically important by calculating the Z statistic for each change. In order for any of the three non-directional comparisons to be significant with a family-wise alpha level of 0.05, the Z statistic must be greater than 2.40 or less than -2.40 (if comparisons were directional, then those critical values become $\pm$ 2.13). However, it is noted that this test is normally used when the overall total number of cases (in this case students) is the same for both time periods (Zwick et al., 1982). Because there is inevitable change in enrollment, this test becomes a more conservative estimate of statistically significant change. In addition, since any increases in actual attendance (and decreases in absences) are expected to be less than five percentage points, statistical significance (i.e., ruling out the possibility that change in attendance is due to chance) might be difficult to achieve.

Results

According to incidence rates, there was an increase in actual attendance in 9 out of the 11 schools, a decrease in unexcused absences in 9 out of 11 schools, and a decrease in excused absences in 7 out of 11 schools between Years 1 and 2.

High Schools

Actual attendance increased in three high schools, stayed the same in one high school, and decreased in another high school. The high school where actual attendance worsened only decreased in actual attendance by 0.1%. Two of the three high schools that improved showed an increase of 0.5%, and the largest improvement was 1.3% (HS#2, District 1). Most of this change is accounted for by decreases in unexcused absences, not decreases in excused absences.

Unexcused absences decreased in all but two high schools. The largest decrease of unexcused absences was 1.2% for a high school (HS#2, District 1) of about 2000 students (roughly 3,884 less student-days of unexcused absences between Year 1 and Year 2). As an illustration, this reduction is equivalent to every student having an average of 5.5 days of unexcused absences in Year 1, but only 3.5 unexcused absences in Year 2. This one high school had the second worst incidence of un-

Table 1

District 1: Percentages of Unexcused Absences, Excused Absences, and Actual Attendance for Years 1 and 2, Percentage Changes in Attendance, Change Needed to Attain Statistical Significance using Stuart's Test, and Z values

Index / Enrollment		HS#1 (1588)	HS#2 (1994)	HS#3 (2076)	JHS#1 (832)	JHS#2 (772)	JHS#3 (1014)	JHS#4 (765)
Unexcused Absences								
Year 1	1996-97	1.7	3.4	2.7	1.5	2.0	2.8	2.5
Year 2	1997-98	1.8	2.2	2.1	1.7	1.8	2.5	2.1
	Change	0.1	-1.2	-0.6	0.2	-0.2	-0.3	-0.4
	Change needed for significance	2.4	1.8	1.8	n / a	1.1	1.4	1.1
	Z	n / a	1.06	0.73	n / a	0.39	0.46	0.57
Excused Absences								
Year 1	**1996-97**	**3.9**	**3.3**	**3.8**	**4.1**	**3.6**	**4.0**	**3.8**
Year 2	**1997-98**	**3.9**	**3.2**	**3.9**	**3.2**	**3.7**	**3.6**	**3.3**
	Change	**0.0**	**-0.1**	**0.1**	**-0.9**	**0.1**	**-0.4**	**-0.5**
	Change needed for significance	**1.2**	**1.2**	**1.0**	**2.2**	**0.9**	**1.7**	**1.8**
	Z	0.00	0.18	-0.22	0.86	-0.24	0.49	0.59
Actual Attendance								
Year 1	1996-97	94.4	93.3	93.5	94.4	94.4	93.2	93.7
Year 2	1997-98	94.3	94.6	94.0	95.1	94.5	93.9	94.6
	Change	-0.1	1.3	0.5	0.7	0.1	0.7	0.9
	Change needed for significance	28.4	28.4	28.3	28.6	28.5	28.2	28.4
	Z	0.01	-0.1	-0.04	-0.05	-0.01	-0.05	-0.07

Note: Values in parentheses are school enrollment.

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Table 2

District 2: Percentages of Unexcused Absences, Excused Absences, and Actual Attendance for Years 1 and 2, Percentage Changes in Attendance, Change Needed to Attain Statistical Significance using Stuart's Test, and Z values

Index		HS#1	HS#2	JHS#1	JHS#2
Enrollment		(2295)	(3029)	(771)	(866)
Unexcused Absences					
Year 1	1996-97	2.1	3.6	3.2	1.6
Year 2	1997-98	2.3	3.2	2.8	1.3
	Change	0.2	-0.4	-0.4	-0.3
	Change needed for significance	n / a	1.0	1.7	1.2
	Z	n / a	0.51	0.6	0.52
Excused Absences					
Year 1	1996-97	4.5	2.9	5.0	4.2
Year 2	1997-98	4.3	2.8	5.4	3.8
	Change	-0.2	-0.1	0.4	-0.4
	Change needed for significance	1.6	1.1	1.0	1.8
	Z	0.29	0.22	-0.78	0.48
Actual Attendance					
Year 1	1996-97	93.4	93.5	91.8	94.2
Year 2	1997-98	93.4	94.0	91.9	94.9
	Change	0.0	0.5	0.1	0.7
	Change needed for significance	28.3	28.5	27.7	28.5
	Z	-0.01	-0.12	-0.1	-0.05

Note: Values in parentheses are school enrollment.

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excused absences of all the schools during baseline Year 1 and had the most dramatic improvement. Two of the other four high schools had overall decreases in unexcused absences of 0.4% and 0.6%, while the other two high schools showed a slight increase of 0.1% to 0.2%.

Excused absences decreased slightly in 3 of the 5 high schools with decreases ranging from 0.1% to 0.2%. In the other two high schools these absences remained unchanged or increased 0.1%. For the junior high schools, 4 out of the 6 decreased their incidence of excused absences by 0.4% to 0.9%.

Junior High Schools

Actual attendance increased in all of the junior high schools. Two schools showed very slight improvements of 0.1%, three showed moderate improvement of 0.7%, and one junior high school showed the strongest improvement of 0.9%. In roughly half of the cases, the decreases in unexcused absences accounts for the improvement in actual attendance, and the decreases in excused absences accounts for the improvement in actual attendance for the other schools.

Unexcused absences decreased in 5 of 6 junior high schools anywhere from 0.2% to 0.4%. As an illustration using the school with the 0.4% decrease, this is equivalent to every student having 4.2 days of unexcused absences in Year 1, but only 3.3 unexcused absences in Year 2. Unexcused absences increased in one junior high school by 0.2%.

Excused absences decreased in 4 of the 6 junior high schools, ranging from a 0.4% to a 0.9% decrease. Two junior high schools excused absence rate increased, one by 0.1% and the other by 0.4%.

Statistical Analyses

The changes in rates of attendance were generally in the positive direction; however the Stuart's test for change did not produce any Z-statistic that was over 2.40 or under -2.40; none of the changes were statistically significant (refer to Tables 1 and 2 for the Z-statistics).

Discussion

The results show that most of the schools participating in these two truancy abatement programs had improved attendance. That is to say, their rates of unexcused and excused absences went down, and, consequently their rates of actual attendance went up. One of the high schools (HS #2, District #1) showed the most dramatic improvement in attendance. Most of the other schools showed moderate improvement. The slight improvement, of course, may be due to normal fluctuation in attendance patterns over the years. One school worsened in actual attendance, but that school's actual attendance was higher than the other high schools' actual attendance in Year 1, and the second highest in Year 2. The schools that increased in excused and unexcused absences had relatively fewer of these absences in Year 1, and were within the range of other schools' percentages in Year 2. One junior high school (District 2, JHS #1), however, increased in the percentage of unexcused absences, and ended Year 2 with 5.4% unexcused absences (1.6% more unexcused absences than the next highest, 3.8%, which was also the average percentage of excused absences for the junior high schools). None of the changes were found to be statistically significant, so none of the changes can be attributed, with confidence, to the influence of the new truancy prevention program. However, most of the changes provide a promising start that, if sustained for several years, would be very important. Such continued results would help corroborate past studies showing the effectiveness of consistent monitoring, reporting, and repercussions for truant youths (Fiordaliso et al., 1977; Helm & Burkett, 1993; Levine et al., 1986).

The limitations of the statistical analysis are important to note since the sizes of the groups being compared changed and this could not be accounted for in the statistical analysis. Additionally, since the actual attendance was already in the high range and the excused and unexcused absences were already in the low range of percentage scores, there are basal and ceiling effects that make statistically significant change harder to detect. Also, any small monitoring problem with regards

to attendance could create bigger problems for analyzing statistical significance.

These districts are trying to get a small group of chronic truants to attend school regularly. These youths often have an array of vexing problems among which nonattendance might be relatively small to moderate. Some examples are youths who are depressed, pregnant, grieving a family member, far behind academically, or working to help their families. There are life events and circumstances in our society that make it especially hard for some youth to want or be able to attend school— so they aren't attending.

Historically speaking, the present figures of attendance appear very high. Actual attendance rates that are 94% to 95% might represent a ceiling above which attaining might require long-term, more intensive intervention. Chronic truancy might be a sign of significant life stressors, which the Truancy Mediation Team (TMT) can address. The TMT process is designed to plan longer, more substantial interventions, for those chronically truant youths who need more encouragement, services, and supervision.

This investigation has only examined school-level results for the first year of a three-year intervention program, so the data are limited. As the program coordinators work out many of the inevitable "kinks," in the computer systems as well as in the services, the attendance rates may improve. The information that will be gathered from the last two years of the program will help to evaluate the utility of such a school and community-wide approach to reducing truancy.

There will always be some percentage of the student population who are ill on any given day. In contrast, unexcused absences are due to such a variety of intertwined reasons including school factors, individual factors, family factors, and community factors, that they paint a very complicated picture in which school attendance might not fit well. A few of the problem issues that have arisen during the TMT meetings such as parental control, gang involvement, pregnancy, death of a sibling, death of a parent and depression are not easily resolved. The members of the TMT are not only gaining experience in dealing effectively with the complicated issues that the youths present, but they are also learning how to collaborate even more effectively among each other. Indeed, when considering the extent of the challenges in many of the youths' lives, the TMT is creating interventions that may only prove effective after a longer period of time. As the second year of the program progresses, the program looks promising not only on a grand scale, but also on an individual scale that is measured one student at a time.

References

Bracey, G. W. (1995). *Final exam : A study of the perpetual scrutiny of American education.* Bloomington: Technos Press.

California Legislature. (1979). *Attendance and absenteeism in California schools.* Joint Legislative Audit Committee Report to the California Legislature prepared by the Auditor General. Report P-832.

Ferguson, D. M., Lynskey, M. T., & Horwood, L. J. (1995). Truancy in adolescence. *New Zealand Journal of Educational Studies, 30 (1),* 25-37.

Fiordaliso, R., Lordeman, A., Filipczak, J., & Friedman, R. M. (1977). Effects of feedback on absenteeism in the junior high school. *Journal of Educational Research, 70 (4),* 188-192.

Garry, E. M. (1996). *Truancy: First step to a lifetime of problems.* Washington, DC: U. S. Department of Justice.

Helm, C. M., & Burkett, C. W. (1993). Computerized absence reporting. In J. J. Cohen & M. C. Fish (Eds.), *Handbook of School-based Interventions* (pp. 34-35). San Francisco: Jossey-Bass.

Levine, R. S. (1984). An assessment tool for early intervention in cases of truancy. *Social Work in Education, 6 (3),* 133-150.

Levine, R. S., Metzendorf, D., & VanBorskirk, K. A. (1986). Runaway and throw away youth: A case for early intervention with truants. *Social Work in Education, 8,* 93-106.

Office of Education, U.S. Department of Health, Education and Welfare. (1976). Interviews of 4202 California Households. *Survey of Income and Education.* Washington, D.C.

Savoye, C. (1983, October 3). The 'attendance robot'— a truant officer's best friend. *Christian Science Monitor,* p. 7.

Schultz, R. M. (1987). Truancy: Issues and interventions. *Behavioral Disorders, 1,* 117-130.

Shuster, B. (1995, June 28). L. A. school truancy exacts a growing social price. *Los Angeles Times,* pp. A1, A12.

Sommer, B. (1985a). Truancy and early adolescence. *Journal of Early Adolescence, 5,* 145-160.

Sommer, B. (1985b). What's different about truants? A com-

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parison study of eighth-graders. *Journal of Early Adolescence, 14,* 411-423.

Stewart, M. J., & Ray, R. E. (1984). Truants and the court: A diversionary program. *Social Work in Education, 6 (3),* 179-192.

Tuck, K. D., & Shimburi, F. N. (1988). *An evaluation of a truancy prevention plan.* Washington, DC: District of Columbia Public Schools, Division of Quality Assurance. (ERIC Document Reproduction Service No. ED 257 210).

Unger, H. G. (1996). California. *Encyclopedia of American education.* New York: Facts on File.

U.S. Census Bureau of Census. (1985). *Statistical abstract of the United States, 1986* (196th ed.). Washington, DC: U.S. Government Printing Office.

Wallin, J. W. (1938) The nature and implications of truancy from the standpoint of the schools. *Journal of Exceptional Children, 5,* 1-6.

Zwick, R., Neuhoff, V., Marascuilo, L. A., & Levin, J. R. (1982). Statistical tests for correlated proportions: Some extensions. *Psychological Bulletin, 92,* 258-271.

Appendix A

Letter # 1 (from the student's school)

Dear Parent/Guardian of (NAME OF STUDENT):

As required by Sections 48260 and 48340 of the California Education Code, we are hereby notifying you that your child was absent or tardy in excess of 30 minutes from school without a valid excuse. After receipt of this letter, the school must be notified, in writing, if there was a valid excuse for these absences or tardies. Under Section 46010 of the Education Code, the only valid excuses for an absence or tardy from school are: illness; quarantine; medical, dental, optometrical, or chiropractic services; attendance at a funeral service of an immediate family member; jury duty; or exclusion from school because the child was not fully immunized. As required by Section 48260.5 of the Education Code you are notified that:

1. You are obligated to compel the attendance of your child at school.
2. Parents or guardians who fail to meet this obligation may be guilty of a misdemeanor or an infraction and subject to prosecution.
3. The District has alternative educational programs available including, but not limited to, continuation high schools, independent study, and home study programs.
4. You have the right to meet with appropriate school personnel to discuss solutions to your child's truancy. Please telephone your school site administrator to schedule a conference.
5. Your child may be subject to prosecution under Section 48264 of the Education Code.
6. Your child may be subject to suspension, restriction, or delay of his or her driving privilege pursuant to Section 13202.7 of the Vehicle Code.

This school is working in close cooperation with the Santa Barbara County Attorney's Truancy Intervention and Parent Accountability Program. Failure to ensure that you minor child attends school may subject you and your child to criminal prosecution. We are interested in having your child in the classroom, and not on the streets. We are willing to work with you and assist you in correcting your child's truancy problem. A copy of this report is being mailed to the Santa Barbara County District Attorney for his information and action. If there are continued incidents of truancy we will take more serious action.

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Letter #2 (from the District Attorney)

Dear Parent/Guardian of (NAME OF STUDENT):

The administrators of your child's school have informed the District Attorney's office of Santa Barbara County that your child has poor school attendance. School attendance is mandatory in the State of California, the Compulsory Education Law states that all children between the ages of 6 and 18 will attend school everyday, unless exempt (Education Code 48200).

It is the responsibility of the parent and the child to ensure a child's regular school attendance. You and your child's failure to comply with the requirements of California Law may result in court action being taken against you and your child by the District Attorney's Office.

Your failure to ensure that your child regularly attends school may subject you to criminal prosecution by this office for the criminal offense of either- (1) Contributing to the Delinquency of a Minor, Penal Code Section 272, which is a misdemeanor and carries a possible penalty of up to one year in jail and up to a $2,500 fine or (2) Violating the Compulsory Education Law, Education Code Section 48291, which is an infraction and carries a fine of up to $500 or placement in a parent education and counseling program.

In addition, court action may be taken against your child that is not attending school [Education Code 48264.5, Welfare and Institutions Code 60 1 (b)]. Your child may be subject to: (1) probation, (2) up to 4 years suspension, restriction, or delay in his or her driving privileges, (3) community service; (4) fines tip to $100: (5) 1 court ordered curfew to be in his or her residence between the hours of 10 p m, and 6 a.m. and / or (6) attendance in a truancy prevention program.

In order to prevent possible court action, you and your truant child must appear for a group meeting with a representative of the District Attorney's Office. This educational group meeting will introduce you to various campus resources that may help you with your child's truancy problem. The meeting will be held as follows:
[Location, Time and Date of Meeting]
You need to inform your truant child that he/she must attend this meeting with you. You may also bring any other school aged children of yours. California Law prohibits certain employers from discharging or discriminating against a parent employee because of attendance at a school meeting such as this (labor Code 210.8). The meeting will last about (1) one hour and
will be conducted in English and Spanish (if needed.) There will be time allowed for questions after the meeting.

Letter #3 (from the District Attorney)

Dear Parent/Guardian of (NAME OF STUDENT):

Your child has missed more than the equivalent of 6 days of school or 36 school periods without a valid excuse, and is therefore declared an habitual truant under Education Code 48262.

Because your child has poor attendance, you and your truant child must now meet with an Assistant Principal at school to discuss possible solutions to improve your child's attendance.

You must contact the Assistant Principal within the next week to schedule an appointment. Failure to make this appointment and/or failure to attend this meeting can be in indication that you are neglecting your parental duties.

If your child receives additional unexcused absences, you and your truant child will be mandated to the Truancy Mediation Team for further interventions.

California Law requires children between the ages of 6 and 18 to attend school every day unless they have a valid excuse. (Education Code 48200). We ask that you work closely with the Truancy Intervention and Parent accountability Program to resolve your child's truancy problem.

Again, we remind you that as a parent you could be prosecuted for your child's truancy under the Education Code and the Penal Code with a penalty of up to 1 year in jail and/or a $2,500 fine. Additionally, your child could be subject to prosecution for truancy. The District Attorney's office will be informed of whether or not you and your child attend this meeting.

Letter #4 (from the District Attorney)

Dear Parent/Guardian of (NAME OF STUDENT):

This school year your son/daughter has missed more than the equivalent of 7 days of school or 42 class periods without a valid excuse. After repeated discussions concerning your child's attendance, there continues to be additional unexcused absences.

This poor attendance is seriously affecting your child's education. Because your child's attendance has not improved, the District Attorney's Office has scheduled a mandatory meeting with the Truancy Mediation Team, yourself, and your truant child. During this meeting we will focus on identifying possible solutions to improving your son's or daughter's school attendance. This meeting has been scheduled as following:
[Location of Meeting] [Date and Time]
Please contact the District Attorney's Office within five days of receipt of this letter to confirm this meeting. Your attendance is required. Your child's attendance is required. If you fail to attend this meeting, you will he subpoenaed to the County School Attendance Review Board (SARB) and your child will be placed on probation.

Again, we remind you that as a parent you could be prosecuted for your child's truancy under the Education Code 48291 and the Penal Code 272 with a penalty of up to 1 year in jail and/or a $2,500 fine. Additionally, your child could be subject to prosecution for truancy with penalties including but not limited to: probation, loss of driving privileges, community service, fines, and/or court ordered curfews. (Education Code 48264.5)

Enclosed is a consent for release and exchange of information form. Please read the release and bring it with you to the Truancy Mediation Team meeting. We want to help you to get your child to attend school daily. Our sincere hope is that court intervention will not be necessary. I look forward meeting with you at the Truancy Mediation Team meeting to resolve this very serious problem.

[1] Youth 16 years of age and older (or having nearly completed one year of tenth grade) may be exempt from school if they pass a high school proficiency (in basic skills) test and receive parental/guardian permission to graduate from high school. Leaves of absence are also permitted with parental/guardian permission.

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